

CHINA'S RESPONSE TO AVIAN FLU: STEPS TAKEN, CHALLENGES REMAINING, AND TRANSPARENCY

ROUNDTABLE

BEFORE THE

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**CHINA'S RESPONSE TO AVIAN FLU:
STEPS TAKEN, CHALLENGES REMAINING,
AND TRANSPARENCY**

FRIDAY, FEBRUARY 24, 2006

CONGRESSIONAL-EXECUTIVE
COMMISSION ON CHINA,
Washington, DC.

The Roundtable was convened, pursuant to notice, at 2 p.m., in room 2200, Rayburn House Office Building, David Dorman (Senate Staff Director) presiding.

Also present: John Foarde, House Staff Director; Carl Minzner, Senior Counsel; William A. Farris, Senior Counsel; Pamela N. Phan, Counsel; and William Leahy, Research Associate.

Mr. DORMAN. All right. It is 2 o'clock. Let us get started.

First of all, I would like to thank everyone in the audience, and in particular, our very distinguished panel today, for coming to this Issues Roundtable of the Congressional-Executive Commission on China entitled, "China's Response to Avian Flu: Steps Taken, Challenges Remaining."

Before we get started, I would like to tell everyone in the audience about a hearing that the Commission is going to have on March 6 from 2 to 3:30 p.m. in Dirksen 419. The title of that hearing will be: "Combating Human Trafficking in China: Domestic and International Efforts." The announcement went out today. If you would like more information, you can find it on the CECC Web site.

As has been standard practice for the Commission, I will make a brief statement, then I will introduce each of our panelists and give each of them in turn 10 minutes to make an opening statement. After each of our witnesses has made his or her opening statement, I will start with a question to the panel, and then give each staff member on the dais an opportunity to ask a question and hear an answer, and we will continue that process until we reach 3:30, or run out of questions.

John Foarde told me this morning this might be our 52nd or 53rd roundtable since the Commission began operating in 2002; to date we have never run out of questions, so I am quite sure that we will be able to continue our discussion for 90 minutes.

With that, let me get started with a short opening statement, and then I will introduce our panelists.

Chinese authorities recorded over 30 outbreaks of avian influenza in poultry stocks in 2005, and have also confirmed 11 human cases of bird flu since November 2005.

In response, the central government has appropriated over US\$200 million for the creation of a nationwide avian flu command center, initiated avian flu emergency management plans, and reported outbreaks to international health organizations in a generally timely manner. Local officials have also culled and vaccinated millions of poultry in affected areas. Still, health experts consider China to be one of the prime incubators for a potential human influenza pandemic. Concerns also exist about the degree of transparency in Chinese Government reporting on some of the outbreaks.

In its 2005 Annual Report, the Commission found that China's State Secrets Law and related regulations hinder the free flow of information on public health matters, both within China and to the outside world. The Commission also found that Chinese Government control over the flow of information had hampered international efforts to combat the spread of the H5N1 avian flu virus.

This Commission roundtable will assess the current status of China's domestic efforts to address avian flu and the degree of Chinese Government cooperation with international agencies and bilateral partners in dealing with the same problem.

Once again, I would like to thank our distinguished panel today for joining us.

With that, I will start with our first Executive Branch witness, Dr. John Clifford. Dr. Clifford is Deputy Administrator of the Animal and Plant Health Inspection Services' [APHIS] Veterinary Services program, U.S. Department of Agriculture [USDA]. As Deputy Administrator for Veterinary Services, Dr. Clifford is USDA's chief veterinary officer. In this position, he provides leadership for safeguarding U.S. animal health and is the United States representative to the International Animal Health Organization [OIE].

Before becoming Deputy Administrator in May 2004, Dr. Clifford served as Acting Deputy Administrator of Veterinary Services. He also served as the Associate Deputy Administrator of Veterinary Services' National Animal Health Policy and Program staff, where he led efforts to protect, sustain, and improve the productivity, marketability, and health of the nation's animals, animal products, and biologics. Dr. Clifford, thank you for coming today. You have 10 minutes for your opening statement.

**STATEMENT OF JOHN R. CLIFFORD, DEPUTY ADMINISTRATOR
FOR THE ANIMAL AND PLANT HEALTH INSPECTION SERVICES'
VETERINARY SERVICES PROGRAM, U.S. DEPARTMENT
OF AGRICULTURE, WASHINGTON, DC**

Mr. CLIFFORD. Thank you very much for the opportunity to be here today. We in the Federal Government take the threat posed by avian influenza very seriously and we are committed to working to carry out the President's National Strategy for Pandemic Influenza.

USDA has many key roles to play, as outlined in the National Strategy. In my mind, though, one of the most important is our involvement overseas to help affected countries take steps to combat the Asian H5N1 highly pathogenic avian influenza virus at its source in poultry populations. Representatives attending last month's International Ministerial Pledging Conference on Avian

and Human Pandemic Influenza in Beijing, China, also recognized the importance of a coordinated global effort to address this disease.

According to the European Commission, co-sponsor of the conference, along with the World Bank and the Chinese Government, a total of \$1.9 billion was pledged by the attending countries. This funding will help affected countries fight outbreaks of the Asian H5N1 influenza virus, and also assist neighboring countries in efforts to prepare for any related human health issues. During the conference, President Bush announced that the United States will provide substantial funding, \$334 million, to support the global campaign against avian influenza. This represents the largest single national contribution thus far to these global efforts.

Resources will be used, among other things, to assist countries with national preparedness plans, improve surveillance and response systems for domestic poultry, and provide assistance in establishing wild bird surveillance programs.

As part of this funding that I just mentioned, USDA received \$18 million to advance collaboration with international organizations to help countries in Southeast Asia take steps to enhance the veterinary infrastructure and adopt other practical, effective programs against H5N1 Asian strain.

My boss, APHIS administrator Dr. Ron DeHaven, has traveled recently to Southeast Asia to assess the animal disease situation in several countries and the steps being taken in response. The information and observations he collected are helping USDA develop its plan to work with international organizations, primarily the United Nations' Food and Agricultural Organization, to deliver the best possible technical assistance to these countries.

By effectively combating this disease in birds, I am confident that we can help lower the virus load in countries and prevent spread to humans, thereby reducing the likelihood that this particular high-pathogenic AI will mutate into a virus capable of spreading not only from birds to humans, but then from person to person.

Before I speak more about the international efforts, including those related to China, I would just like to say a few words about the steps we are taking domestically to protect against the introduction of Asian strain H5N1 in the U.S. poultry populations. These programs, many of them longstanding, are every bit as critical as the efforts we are undertaking overseas to help to protect the United States. USDA is keeping potentially infected poultry and poultry products from countries affected by Asian H5N1 virus out of the United States through import restrictions. We quarantine and test all live birds imported into the United States to ensure that they are disease-free. We carry out an aggressive surveillance program that looks for any signs of illness in the commercial U.S. poultry flock. We are also on the lookout for smuggled birds or products from overseas that could harbor the disease. USDA also maintains a stockpile of avian influenza vaccine should the need arise to vaccinate commercial poultry as part of a virus control and eradication effort.

We are making sure that the State-level responses in the event of a disease detection are constantly updated and take into account all the steps necessary to address the situation. In total, the funding

I mentioned a moment ago also directs \$73 million to USDA to enhance these, and other, domestic avian influenza-related efforts.

I think the best way to frame our discussion of avian influenza in China is to trace significant developments in chronological fashion, and then I will be happy to answer your more specific questions. Evidence seems to suggest that the Asian H5N1 AI virus emerged in Southern China and Hong Kong in 1997. We know, too, that the virus did not start causing mortality in large numbers of birds in China until late 2003. In response to the escalating animal health situation, in January 2004, APHIS and the U.S. Centers for Disease Control and Prevention issued emergency import restrictions on poultry and poultry products from China and seven other countries in East and Southeast Asia.

It is important to note here, however, that APHIS has had long-standing prohibitions in place on live poultry and poultry products from China, as well as most other Asian countries, due to the widespread presence of exotic Newcastle disease, another significant poultry disease in that region of the world. So, no significant quantities of live poultry or poultry products from China or other countries in Southeast Asia were being imported into the United States.

Again, though, in 2004, we felt it a prudent step to issue the emergency import restrictions due to the threat that the Asian H5N1 virus poses to animal health, as well as concerns by public health officials that the virus could potentially have human health implications. Later, in 2004, APHIS placed restrictions on imports from all countries reporting detections of Asian strain H5N1 in poultry, and these further restrictions prohibit the importation of all live birds, including those previously allowed entry provided that the birds went through a lengthy post-entry quarantine period; all feathers and feather products, including those treated overseas or imported into the United States for treatment; and processed or rendered poultry products for human use or consumption.

In the summer of 2004, China requested that APHIS consider regionalizing the country to enable the trade of poultry and poultry products from areas of the country unaffected by Asian H5N1 virus. Regionalization is a tenet under the World Trade Organization's [WTO] sanitary and phytosanitary agreements. APHIS considers all such requests and, in order to do so, we requested on several different occasions that the Chinese Government provide us with information on the disease situation in the country and steps take in response.

To date, the Chinese Government has not provided us with this information; therefore APHIS has been unable to begin considering the regionalization request. I would also add that, while China has reported cases of the disease to the World Organization for Animal Health, the OIE, there has been no independent verification of those reported detections by agencies outside of China.

We commend Chinese authorities for reporting detections to the OIE, but we also feel that officials need to be more transparent and forthcoming with information on surveillance testing, disease control and eradication measures, and related information. Along these same lines, I would like to acknowledge China's lifting of its import ban on all U.S. poultry and poultry products, which was put

in place following the detection of the high-pathogenic avian influenza virus in a flock of 6,600 birds in Texas in February 2004. That detection was quickly contained and eradicated without any further spread to poultry or any human health implications. It is a testament to the excellent surveillance and emergency response plans we have in place for serious poultry diseases here in the United States.

APHIS provided the Chinese Government with information on the detection and related issues in August 2004, and Chinese officials removed the ban in October 2004. U.S. product began moving to the country again in January 2005.

As I said at the outset of my remarks, USDA believes that a coordinated effort to address Asian H5N1 avian influenza in poultry populations in affected countries is the most important step that could be taken to prevent a pandemic situation. In support of this international coordination, APHIS and USDA officials have certainly been keeping an active international travel schedule. In July 2005, we attended the Symposium on International Animal Health Standards for the member countries of the Asia-Pacific Economic Corporation group, as well as the October 2005 meeting of senior officials from the International Partnership on Avian and Pandemic Influenza, a group of key nations and international organizations launched by the United States in September 2005.

In addition, USDA participated in a November 2005 meeting on avian influenza and human pandemic organized by the OIE, the Food and Agricultural Organization [FAO], and the World Bank. We were also part of the WHO's December 2005 meeting to develop an international unified strategy to control Asian H5N1 virus in birds.

In regard to China, APHIS and USDA officials met with their counterparts in Beijing in November 2005 as part of a poultry health symposium. Much discussion took place on issues such as regulatory measures, disease surveillance, and international animal health requirements for the disease. The meeting was followed by a WTO ministerial meeting in Hong Kong in December 2005. During the meeting, an annex was approved for a Memorandum of Understanding already in place between USDA and the Chinese Ministry of Agriculture. The annex details the formulation of working groups that will meet on a regular basis to discuss technical animal and plant health issues. We are currently working to arrange the first meeting of the Animal Health Working Group, and our goal is to engage in a sustained dialogue with our Chinese counterparts on many important issues. Chief among them is domestic surveillance in China for Asian H5N1 avian influenza.

It is our strong desire that this type of regular communication with Chinese officials will help encourage further transparency on the animal disease front. It is our hope, too, that China will engage more fully in international efforts to formulate effective strategies against Asian H5N1 avian influenza virus.

With that, I conclude my statement. Thank you, again, for the opportunity to be here today.

[The prepared statement of Mr. Clifford appears in the appendix.]

Mr. DORMAN. Dr. Clifford, thank you very much for that very useful and interesting testimony.

I would like to introduce our next witness from the Executive Branch, Ms. Erika Elvander. Ms. Elvander is from the Office of Asia and the Pacific, Office of Global Health Affairs at the U.S. Department of Health and Human Services [HHS]. Ms. Elvander has coordinated East Asia and Pacific policies since 2001 for the Office of Global Health Affairs, Office of the Secretary, U.S. Department of Health and Human Services. She currently focuses on bilateral and multilateral U.S. health cooperation with a number of key countries in the region, including China, Japan, the Republic of Korea, Singapore, Thailand, Vietnam, and the U.S. territories in the Pacific, and with the Freely Associated States. The bilateral activities touch on a number of important disease issues, but recently have included Severe Acute Respiratory Syndrome [SARS], HIV/AIDS, pandemic and avian influenza, and tuberculosis [TB].

Ms. Elvander, thank you very much for joining us today. You have 10 minutes for your opening statement.

STATEMENT OF ERIKA ELVANDER, OFFICE OF ASIA AND THE PACIFIC, OFFICE OF GLOBAL HEALTH AFFAIRS, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, WASHINGTON, DC

Ms. ELVANDER. Thank you so much for having me.

In December 2003, the global community learned of reports from Korea of its first-ever cases of Avian Influenza (A) H5N1. Shortly after this, H5N1 appeared among poultry in a number of countries in East Asia, including Thailand, Vietnam, and China. Since then, H5N1 has spread to Central Asia, Europe, and the Middle East. As we know, in recent weeks Nigeria reported the deaths in its northern provinces of over 40,000 birds from H5N1, bringing the disease to Africa.

In addition to these avian cases, human cases are appearing sporadically across the globe. As of February 20, 2006, the World Health Organization [WHO] confirmed 170 human cases, of which 92 have been fatal. In all but a very few cases, all confirmed human cases could be linked to contact with sick poultry or animals.

While 92 human deaths may not be considered significant in the context of other diseases such as tuberculosis and HIV/AIDS, the high rates of mortality, the lack of predictability about who could contract the disease, and fears of genetic changes within the virus cause great concern about human cases of H5N1.

Globally, the emergence of a new strain of influenza with pandemic potential has public health officials extremely concerned. Thus, multilateral organizations such as the World Health Organization, the World Organization for Animal Health, and the Food and Agricultural Organization of the United Nations, as well as larger donor governments such as the United States, Japan, and the European Union, have begun to apply political pressure and provide financial and technical assistance to help countries around the world affected by the animal disease epidemic in hopes of stemming a possible human pandemic.

H5N1 is one of many strains of influenza, or flu, of which only some affect humans, or birds, or both, and some that affect other species. Not all strains are highly infectious or cause high rates of morbidity or mortality, but the mere fact that influenzas change

and mutate is why specialists carefully watch flu strain patterns every year to predict which strains will be responsible for the regular, seasonal human flu, which causes about 36,000 deaths in the United States a year.

Beyond seasonal flu, H5N1 specifically is of concern for a couple of reasons. First, flu pandemics tend to come in cycles of 30 to 50 years. The “Spanish” flu of 1918 is thought to have caused between 20 and 100 million deaths worldwide, and more than 500,000 deaths in the United States. While subsequent pandemics have been less deadly—the last true flu pandemic occurred in 1968 and caused 1 million deaths worldwide—the specter of the 1918 pandemic lingers on.

Second, the H5N1 strain in circulation among animals seems to cause extremely high rates of mortality among humans. Third, while vaccines specific for H5N1 are in development, they are still being tested and, if proven to be effective, will take time to manufacture and distribute. In the interim, other drugs, such as amantadine and oseltamavir, commonly known as Tamiflu®, are in limited supply and are of limited use.

While it is clear that direct exposure to diseased birds seems to be a necessary link in humans contracting disease, other information about how, when, and why H5N1 causes disease in its human victims is still a mystery. The ability of flu viruses to mutate quickly causes public health officials to be on the lookout for sustained effective human-to-human transmission. This makes health ministers lose sleep at night, and their agricultural counterparts toss and turn, worrying about the drop in trade that the die-offs in poultry are causing.

H5N1 has appeared before and, as my colleague from Agriculture noted, it first appeared in Hong Kong in live bird markets in 1997. Appearing to only affect chickens at first, public health officials became alarmed when six people died from it. Alarmed by what appeared to be a possible harbinger of a pandemic, the Hong Kong health authority, led by Dr. Margaret Chan, now with the WHO, made the courageous decision to order the destruction of every single chicken, duck, and egg in Hong Kong. Over 1 million birds were culled, and human cases of H5N1 seemed to abate at 18 cases and 6 deaths.

Biosecurity measures in live markets were put in place that ensured better separation between humans and poultry, and policies were instituted that ensured tissue and blood samples from every shipment of poultry from China—mostly Guangdong and Shandong provinces, where most poultry in Hong Kong originates—were taken and tested for H5N1. The goal was an effective animal surveillance system that would catch as possible outbreak before human cases could occur.

H5N1 did reappear in February 2003, when two human cases were detected in Hong Kong from travelers returning from Southern China, suggesting that H5N1 was circulating, at least among domestic poultry, during the prior year.

While the Ministry of Agriculture of China never officially confirmed new avian cases linked to these human cases, these cases were quickly overshadowed by what became the Severe Acute Respiratory Syndrome, or SARS, outbreak that dominated public

health and global media attention that spring and summer. When Korea reported its first case of H5N1 in December 2003, the current outbreak officially began.

A couple of words on Hong Kong. Hong Kong is, of course, a unique situation. In 1997, it became a Special Administrative Region of the People's Republic of China. However, with the "one country, two systems" policy, it is still, to a large extent, an economic entity entirely separate from the mainland, with different infrastructures, business practices, and economic development. China cannot afford to lose the technological, economic, and academic advantages that Hong Kong brings to it, and thus allows it to continue to function, at least economically, at some level on its own. Furthermore, Hong Kong is always at "Code Orange" for avian influenza, and as such maintains animal husbandry and biosecurity practices far different than most of rural mainland China.

As such, until as recently as last month, Hong Kong managed to keep itself relatively H5N1 free, even in the face of continued outbreaks around it in the surrounding areas. And while no human cases from Hong Kong have been reported since 2003, it has an urban population still smarting from the memories of SARS, the economic wherewithal to pursue these high-level biosecurity measures, the geographic limits, and the community will to maintain this so-called "orange alert" status for H5N1.

Now, as many of you know, recently Hong Kong reported H5N1 cases in native magpies, which has caused great concern for local health authorities, who fear H5N1 may have been brought to Hong Kong from the mainland, and worse yet, that H5N1 may now be endemic within the territory. Indeed, scientists support their suspicions of importation of the disease from China, as recent studies from Hong Kong, but funded from HHS's National Institutes of Health, have demonstrated that the H5N1 virus endemic throughout China is the likely source of outbreaks among poultry in surrounding countries and territories.

Now, then, to China. As you know, about 60 percent of its population lives in rural areas. There are—or rather, were—15 billion domestic fowl in China last year. That is to say, one-fifth of the world's poultry—mostly chickens, but also significant numbers of ducks, turkeys, and geese that are raised for domestic consumption come from China. China has both large-scale production facilities and family backyard farms. Indeed, most rural families have about 10 to 25 chickens and ducks which are kept for food and income.

So what is a country, scared by their SARS experience and faced with an economic and possible public health disaster like H5N1, to do? As my colleague from USDA has already mentioned or discussed, outbreaks amongst birds must be contained; monitoring and reporting of suspect animal and human cases must continue in a transparent manner. However, given that most strategies for containment among birds include the culling and eradication of flocks where exposure to H5N1 is suspected, posing a huge loss for farmers, the disincentives for reporting animal cases are high. Compensation for lost flocks is a complicated issue that an economist can address far better than I can, or will. Moreover, for countries that export poultry, and China is one of them, mostly to Japan and Hong Kong, reporting cases to the international community can be

viewed as a trade risk and economic considerations sometimes take precedence over public health concerns.

Having said that, I think that lessons learned from HIV and SARS both appear to have encouraged Chinese authorities to recognize the need to investigate openly and report at least suspect human cases of H5N1.

Up until the summer of 2002, China continued to deny that HIV/AIDS had epidemic potential within its borders, preferring to place blame on outside forces. As my colleague from CSIS knows too well, U.N. organizations, donor countries, as well as NGOs such as CSIS, applied both public and private pressure on the government of China, trying to convince officials that the economic and health impacts of not acknowledging and dealing with the burgeoning HIV/AIDS problem were far greater than continuing to deny it.

As a result, Chinese officials began to open up internationally—and more importantly, domestically—about HIV/AIDS in China, and within a year China had successfully competed for a \$32 million two-year grant for HIV from the Global Fund to Fight HIV, TB, and Malaria. At the same time, the United States and other donors made financial commitments to China's Ministry of Health for both research and technical assistance in confronting HIV. China had learned that openness about public health issues of global concern would not necessarily bring shame, but might actually bring financial resources.

However, the lessons from HIV/AIDS did not seem to apply until late in the game with SARS. Reports of a strange new respiratory illness with high levels of mortality began to appear in late February 2003. When what became the SARS outbreak finally ended later that summer, over 8,000 cases would be reported, with 775 deaths in 30 countries and 6 continents.

As noted earlier, public health practitioners were originally concerned that the SARS outbreak was the next flu pandemic, and indeed, two early suspect SARS cases proved to be H5N1. Early on, Chinese officials were concerned about the impact and outbreak that a disease of unknown origin would have on travel on the Chinese New Year, the largest travel day of the year worldwide. The government chose to delay entry to international experts and continued to question if SARS had epidemic potential domestically. It was only when rumors about the disease began to have an impact on tourism, as well as rising international outcry at cover-ups, that China opened its borders to scrutiny, but as usual, in a carefully monitored and controlled fashion.

By the end of the SARS outbreak, according to the World Bank, the impact on the Gross Domestic Products of countries in the region was between 0.4 and 0.5 percent, or between \$20 and \$25 billion for the region, not limited just to China. In the process, a number of high-level Chinese officials, including the Minister of Health and the Mayor of Beijing, lost their jobs.

And yet, embarrassingly for China, it was not over yet. In March 2004, an accident at the National Institute of Virology in Beijing, China's premier virology laboratory, infected two researchers with SARS and the Institute closed.

I note that China's idea of transparency and openness is still one with a degree of control involved. All decisions and reports on

human cases are made by the central government, not by local officials, which can add time to official announcements; further anecdotal reports suggest that some restrictions have been placed on the press.

I also want to note that when the first suspect human case of H5N1 finally appeared in late October 2005, the Ministry of Health engaged the international community by inviting outsiders in to work side by side with Chinese experts in investigating the cases. Government announcements come with clearly defined solutions already in place, suggesting that the government has the situation under control. Nevertheless, the Ministry of Health's willingness to open itself to international scrutiny is a huge step, and China has been publicly praised internationally and promised further assistance in dealing with human cases.

Unfortunately, the lessons learned from SARS by the Ministry of Health do not seem to have translated well to the Ministry of Agriculture, as my colleague from USDA has noted. When wild birds began dying in Qinghai province in April 2005, the Ministry of Agriculture delayed allowing international scientists and observers into the actual areas where the deaths had occurred, citing so-called security concerns, although the deaths were largely in nature preserves.

Finally, late last summer, as wild and domestic birds continued to die across China, international observers were invited to see the veterinary lab in Harbin, which had tested tissue samples. The Ministry of Agriculture continued to refuse to share samples with international bodies, and, equally challenging, continues to refuse to share samples with the Ministry of Health, claiming flatly that this is not a human health issue, but rather a trade issue.

While the Ministry of Agriculture has recently been more forthcoming with reports of outbreaks, the timing of its willingness to share seems to coincide with both reports of human cases, large-scale ministerial poultry vaccination campaigns, and Premier Wen Jiabao's January 2006 commitment at the Beijing Donors Conference to cooperate with the international community.

There is no question that we see an increased level of commitment and cooperation by the Chinese Government. Both in-country coordination between Ministries and communication with outside organizations have improved. More importantly, the Ministry of Health has shared samples from human cases through the WHO network.

However, it is important to point out that human cases of H5N1 in China are often recognized before recognition of disease in poultry in the same locales, indicating the shortcomings of the animal surveillance system. In some of the human cases reported over the past few months, the victims came from regions in which no previous bird infections had been reported, even though the transmission occurred from contact with infected poultry.

China has also recently begun a policy of being both a donor and a recipient of international assistance, reaching out politically and financially to partners in the region and, even at the Beijing Pledging Conference last month, made a point of being a donor as well as a recipient.

We have already referenced what the U.S. Government is doing. What I would simply say is that, in 2004, HHS alone funded more than \$34 million worth of biomedical research in basic public health activities with China, and we foresee this figure increasing, not decreasing. The U.S. Government recently established a platform with China, the program of emerging and reemerging into diseases that will promote cooperation between the two countries on a number of infectious diseases, but first on avian flu. In part of that, HHS will be assigning three new staff to China to work specifically on emerging diseases.

It is our belief that by working with China as a partner to confront issues of public health import such as avian flu, we will be able to create an environment that will not only promote scientific and biomedical transparency and sharing of data, but also will improve China's public health surveillance and disease reporting network so that epidemics may be prevented and contained, not left to fester quietly.

I would also encourage everyone to go to a number of good Web sites, including *www.pandemicflu.gov*, which is the U.S. Government's primary site for all things related to flu, and there are a number of others as well.

I will answer any questions. Thank you for your time.

[The prepared statement of Ms. Elvander appears in the appendix.]

Mr. DORMAN. Good. Thank you very much for that testimony. It will generate, I am sure, many questions in the next hour. Thank you.

I would like to introduce, next, Dr. Bates Gill.

Dr. Gill is the Freeman Chair in China Studies at the Center for Strategic and International Studies. Dr. Gill has held the Freeman Chair in China Studies at the Center for Strategic and International Studies since July 2002. He previously served as a Senior Fellow in Foreign Policy Studies, and inaugural Director of the Center for Northeast Asian Policy Studies at the Brookings Institution. A specialist in East Asian foreign policy and politics, his research focuses primarily on Northeast Asian political and social issues, especially with regard to China. His current projects focus on U.S.-China-European Union relations, on China as a growing influence in Asian regional affairs, and on China's challenging domestic policy agenda, especially with regard to the social safety net and China's HIV/AIDS crisis.

Thank you very much for joining us today, Dr. Gill. You have 10 minutes for an opening statement.

STATEMENT OF BATES GILL, FREEMAN CHAIR IN CHINA STUDIES, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, WASHINGTON, DC

Mr. GILL. Thank you very much, Mr. Dorman. Let me also thank the Commission chairmen and the whole staff for inviting me to provide my views this afternoon. I commend very much the Commission for taking up these issues and look forward to having a discussion with you on them.

It is clearly a very important and timely topic. We have noted already that the disease has spread from Asia, to the Middle East, Europe, and Africa, and the prospect, of course, that it may, in the

coming season or beyond, spread in a more deadly way into the Americas and elsewhere. The World Bank has made an estimate that the first year of an avian flu pandemic could cost the world economy up to \$800 billion.

Given the interest of the Commission, and given topics which have already been covered by my two colleagues, I would just like to briefly touch on three areas.

First, some of the issues of the current situation concerning avian flu in China which maybe we have not discussed quite yet; some of the steps that the Chinese Government has put in place; and I would like to focus most of my remarks on what I think might be of most concern to the Commission, and that is the challenges that are remaining in China's approach to avian flu, and what is being done about it, especially within the government and among civil society.

China is not only the most populous Nation in the world, as we have heard, it also has the most poultry. According to the Food and Agricultural Organization of the United Nations, fully one-fourth of the world's chickens, two-thirds of the world's domesticated ducks, and a remarkable nine-tenths of the world's domesticated geese are living in China.

Now, just the sheer size of the populations, both human and among poultry and birds, makes China a pivotal point for all of us to consider the potential spread of this disease.

According to the World Health Organization, as of February 13, 2006, China reported the country's 12th laboratory-confirmed case, and eight of those have been fatal. I find it interesting that cases have now occurred in a pretty widespread area in China, covering seven different provinces, including Anhui, Fujian, Guangxi, Jiangxi, Hunan, Liaoning, and Sichuan.

As has already been noted by Ms. Elvander, another interesting point I think we should take note of is that about one-third of China's reported human cases thus far have occurred in areas where there were no reported poultry outbreaks. This is, I think, some cause for concern going forward.

Second, what steps have been taken? I agree with my colleagues that, generally speaking, we should all be encouraged that, at least in comparison to China's response to other infectious diseases, such as HIV/AIDS, and of course the SARS outbreak of 2003, this time, I think, Beijing deserves some praise for its efforts to control the avian flu. Senior officials at international organizations, as well as from across governments, are generally positive that at the central level, at least, there has been a strong political commitment to tackling the avian flu problem.

A number of specific steps have been taken in organizing the bureaucracy, at the central level, at least, to address this problem more effectively, including the announcement of specific contingency plans by the Ministry of Health in September 2005.

Also, I found it interesting that the State Council, at the early part of this year, announced national response plans for nine different types of emergencies, one of which included public health incidents, thereby putting the central government very strongly on the record and mobilizing bureaucracies to be more responsive in an emergency mode as different crises might emerge, including on

the health front. Also, official structures within the bureaucracy have been established beyond just simple pronouncements. The Ministry of Health has set up a special department, apparently, to deal with avian flu. The Ministry has also established 192 monitoring spots throughout the country to try and cover the potential for flu outbreaks. Following the State Council's emergency response plans, the Ministry of Health announced the formation of a national expert team, consisting of some 105 experts, which could be quickly brought together, mobilized, and sent to areas of concern, should, and when, there be outbreaks of disease.

I think all of these steps are obviously to be welcomed. I would say that it is still too early to know, having been only about a half a year that these various steps have been taken, to know how effective it would be in the case of a real emergency.

I would also remind all here of the traditional difficulty that a stovepiped bureaucracy in China has had in trying to effect cross-bureaucratic cooperation, not unfamiliar to us here in our country, but China seems to be especially difficult, having invented the bureaucracy so many thousands of years ago. This point, I think, is critical, because obviously one single ministry, in the case of an avian flu outbreak, cannot possibly be capable of addressing the emergency on its own.

On the international cooperation front, too, I think Beijing should be commended, especially for hosting the International Pledging Conference, and pushing ahead on a Beijing Declaration resulting from that conference, which has a number of effective recommendations. It calls for increased cooperation and openness across the international community.

Let me spend the rest of my time talking about what we might call the remaining challenges. I see three big challenges. All of these are areas in which the United States and China can cooperate, and I think all of these are areas about which the Commission has particular interest.

During the SARS outbreak two years ago, we saw China encounter intense criticism from the international community for its delayed response and its cover-up in the initial stages of the epidemic. This time around we do see some improvement, but there are lingering problems about which we should be concerned. First is transparency. Fearful of censure, Chinese provincial and county officials sometimes might choose to conceal infection outbreaks from the central government. That was surely the case during the SARS outbreak. Additionally, as has been already noted, predominantly poor Chinese farmers will be often reluctant to report potential health risks, giving them an incentive to hide an outbreak for economic reasons.

I would point, too, to the recent benzene spill in the Songhua River in northeast China as an example of how local authorities will, at least in the early stages, seek to suppress bad news.

Second, we have to talk about technical capacity and financial resources. Even with the degree of political commitment, which I think we can be convinced of, at the central levels in Beijing, the lack of capacity and resources at local levels remains a very large question mark in China's handling of avian flu. This is particularly

so since we can expect that, should major outbreaks occur, they are going to occur in rural and poorer parts of the country.

None other than Health Minister Gao Qiang himself has identified his largest concern about this in a press conference in November 2005. He said, “the inability of our medical and quarantine personnel at the local level to diagnose and discover epidemics in a timely fashion due to lack of skills and relatively backward equipment is my largest concern.” The country still faces a shortage of experienced and qualified professionals, resulting in misdiagnosed patients, some of whom were said to have pneumonia instead of avian flu. There is a great need for qualified and experienced veterinarians, especially in the rural areas. Meanwhile, many villages and towns do not have effective surveillance systems; recall that they have only set up 192 of them in a country as vast as China. Also, it is typically only after patients are admitted into hospitals and are identified as having H5N1 that local officials would begin to investigate the patients’ villages.

But it is not just a technical question. The overall healthcare situation in China, I think, raises additional concerns. As reported from the Development Research Center of the State Council, a think tank directly under the Cabinet, 90 percent of China’s rural population is not covered by any form of medical insurance. The same report also notes that China’s medical reform has been unsuccessful because it has become unbearably expensive to patients, and many dare not go to the hospital when they fall ill.

Lack of medical insurance, together with ill-equipped countryside clinics and hospitals, makes rural China an extremely vulnerable spot when facing infectious disease outbreaks. In other words, cases may well go unreported simply because people do not choose to go to the doctor or to the hospital.

Last, let me discuss a third area that I think is still a challenge, and that has to do with public awareness. As a result of poor educational conditions and the lack of available resources, especially in rural parts of China, public awareness and knowledge of a possible pandemic is limited, particularly in rural areas. This adds an enormous barrier to overcome in terms of avian flu education and prevention.

Basic information about the symptoms, how it is contracted, and where the breeding grounds for H5N1 virus are, and other general information should be distributed more widely to the public, particularly the rural population, in order to implement preventive measures.

The “Beijing Declaration,” which came out of the Pledging Conference last month, called for the mobilization—I thought, interestingly—of all social sectors, including non-government civil society, to effect a coordinated response and that community-based NGOs ought to be encouraged to partner with the government to promote public education and enhance public awareness, in particular in hard-to-reach populations and areas.

The case of China HIV/AIDS-related NGOs may be instructive here. We have learned that such groups have tentatively begun to assist the government to reach out to socially marginalized groups and provide training, care, support, and preventative messaging. Thus, I think the role of NGOs and the fight against avian flu and

other highly pathogenic and infectious diseases should be expanded in China as well.

Let me conclude on the note that the possibilities for public/private cooperation on these questions, both on the U.S. side and in China, are increasingly open. The examples that we could point to, Ms. Elvander and I, of informal cooperation between public and private actors in trying to encourage more open and more responsive policies on the part of Beijing toward some of its infectious disease challenges, I think, are instructive.

We see in China today an increasing openness and acceptance in the idea of partnering, even with foreign private entities, with the Chinese public sector to help tackle these kinds of infectious problems.

Just generally speaking, I think it speaks to a greater openness and possibility for civil society and private actors to have a role in China in dealing with these kinds of problems. Thank you very much.

[The prepared statement of Mr. Gill appears in the appendix.]

Mr. DORMAN. Dr. Gill, thank you very much.

Witness testimony is very important to the Commission. At least since 2003, and perhaps before, our Commission Members have identified the issue of public health, in general, and specifically the Chinese Government's record in dealing with the international community in containing global health challenges, as an important part of the Commission mandate.

Public forums such as this one are among the most important ways that the Commission receives information on these issues, so I thank all of you, on behalf of our Chairman and Co-Chairman, for being here.

I have seen my colleagues on the dais scratching down what must be hundreds of questions during your testimony, and I think most of the questions are going to focus on Chinese Government efforts to combat avian flu, and the degree of cooperation with both international and bilateral partners.

But before we go in that direction, I would like to take my couple of minutes to expand the scope of our discussion by asking each of you to help the Commission understand the complexity and difficulty of the problem that China is facing.

There have been news reports over the last couple of days mentioning that the Netherlands and France have received EC approval to begin vaccinating poultry stocks. All of these reports point to the fact that measures like these usually only occur in countries that face an avian flu problem that has become "entrenched." The Netherlands and France are developing preventative responses before a problem develops or becomes "entrenched," regardless of whether or not we might agree that this is the right response.

China has been vaccinating poultry flocks and I believe it would be accurate to describe the avian flu problem there, unlike the Netherlands and France, as "entrenched." What does it mean for a disease to be "entrenched" in a society, and second, how does it become "entrenched?" Has this "entrenchment" resulted from a unique agricultural situation, a unique human situation, or do diseases like this become "entrenched" because of the lack of a seri-

ous, early response by government actors, or is it a combination of all of the above?

Mr. CLIFFORD. I will go first. I think with regard to these types of diseases becoming entrenched in countries, it is probably initially either a lack of infrastructure or a lack of action to be able to appropriately address these diseases. I think that is basically summing it up.

One of the things that we have encouraged, through the FAO and as well as the OIE, is basically an assessment tool to assess a number of these countries that have had this disease for some time and have been unable to eliminate, eradicate, and control this from their domestic poultry populations. I think it is important that we do an assessment to make sure that we provide the right kind of resources, training, and support that they need to be able to not only eradicate or control this disease in the short term, but also be able to sustain that and have the infrastructure to deal with these types of things in the future.

Ms. ELVANDER. The other thing I would add is that we are talking about chickens. They have a short life span to begin with. What you are seeing, where H5N1 has occurred, is in countries which probably already have Newcastle's disease, fowl cholera, and other avian diseases. If a pig gets sick, a farmer is probably going to take better care of it, or if a cow gets sick, because there is a longer term investment. But you are dealing with chickens. Fifty percent of chickens, in some parts of this part of the world, die anyway and no one really knows why, and you can usually eat the ones that die for unknown reasons. So if you are talking about a backyard farmer situation, such as in Vietnam, where 90 to 95 percent of all chickens are in backyard farms, you are asking local farmers to not eat and/or kill off potential sources of protein because of unpredictable disease that in terms of total numbers—compared to other human diseases—has directly affected very few people.

Further, the financial investment and the protein investment is very different than if you are dealing with a cow or some larger animal which is going to live longer and give you a different resource.

The other thing I would point out is that the slaughtering practices in this part of the world are important to think about. Most Asian farmers or Asian consumers of chickens want to see their chicken slaughtered in front of them in a live bird market or they will slaughter it themselves. So, there is a certain sanitary/hygiene aspect of poultry slaughter going on here that is perhaps not as significant in the Western community. I do not know if you want to build on that or not.

Mr. CLIFFORD. I would agree. In the United States, our poultry operations on the commercial side, the majority of ours, are highly integrated operations with good biosecurity.

It is a totally different situation than you see in many of these countries as far as the practices in which poultry are raised, as well as the incentive issues. We have incentives in the United States for reporting these types of diseases.

Mr. DORMAN. Dr. Gill, did you want to add anything?

Mr. GILL. To answer your direct question, I think it is obviously a combination of both. It strikes me that while technical solutions

to these problems, such as widespread vaccination or something similar, are often attractive, I am not sure, in the case of massive vaccinations, if something very massive had to occur. I am not sure that at this point there would be the technical resources or prompt enough access or delivery capability of that kind of a program to wide parts of China. So, I would fear that, while it might be an attractive, immediate answer, given the scale and the numbers that we are talking about, as well as the relative technical difficulties that we would face, especially in rural parts of China, that I do not think we can necessarily see that as a good answer.

Mr. DORMAN. Good. I think I would just paraphrase what I have heard from each of you. The Chinese Government is building a public health infrastructure to deal with diseases like avian flu, but it is building this capability after the fact. All of you have pointed to efforts by the Chinese Government to do this. But, of course, the challenge is very large.

I am going to turn the dais over to my colleague, John Foarde, who serves as Staff Director for Representative Jim Leach, who is our Commission Co-Chair. John.

Mr. FOARDE. Thank you, Dave. Thanks to all three of our panelists. Two, Dr. Gill and Ms. Elvander, are friends that have helped us many times before. It is Dr. Clifford's first time, and I hope it will not be the last one.

Mr. CLIFFORD. Thank you.

Mr. FOARDE. We appreciate you sharing your expertise with us this afternoon. Dr. Clifford, you discussed during your presentation the request for regionalization that the Chinese Government made in 2004, and that raised the question, when you were discussing the lack of response to APHIS' request for information, about the reasons behind the Chinese Government's lack of response. I was trying to understand, in other words, what the problem is in China. All three of you have talked about capacity problems. I am wondering, what is your assessment of the capability for information gathering, particularly by, say, provincial and local health bureaus, or even the Ministry of Health itself? How good is it or does it need to improve? Is that the problem that prevents these sorts of requests from being responded to, or is it a political problem or a problem of some other sort?

Mr. CLIFFORD. Actually, others here may be able to answer that particular component better than I can. I know that we have not been able to get that type of information. Even our people in Beijing, when they have asked for that type of information, it is not provided to them. So, I do not know if it is a case of a lack of capacity or if it is a case where it has just not been provided.

Mr. FOARDE. Does anybody else want to comment?

Mr. GILL. In this particular case of monitoring for avian flu, I do not have any direct or personal experience or information. If it is fair to base an answer on experience, looking at the way these sorts of surveillance mechanisms are employed and utilized in other infectious diseases, I think we have a problem because I do not think necessarily that it is conscious obfuscation, or an effort to try to lie, or misinform. It may be more likely simply a problem of having good information at the central level of what is going on

at more localized levels. There is reporting going on, but the question has to arise: is that reporting good?

It strikes me that the incentives at the local level to be less open are greater and the technical capacity to accurately gather and collate and process, analyze, and put forward data is also weaker.

So if we are seeking information at a central level, I think they will probably do the best they can or they will just say they do not know. That may well be the case.

Mr. FOARDE. That is useful. Thank you. Erika, I have a minute to ask one more thing. I was very intrigued by the "Code Orange" in Hong Kong comments that you made. I just wondered, are there any other avian diseases, such as Newcastle, avian cholera, or other things that Hong Kong is "Code Orange" or above for at the moment?

Ms. ELVANDER. I used that sort of as a metaphor based on our own homeland security system. I do not know. In direct answer to your question, I do not know. But I know that Hong Kong has the political will to do this, and NIH is funding a lot of what they are doing on the borders. Everyone has heard of Dr. Rob Webster in the news out of St. Jude's. He spends three months of his year at Hong Kong University doing this sort of research.

Do you know if they do the same?

Mr. CLIFFORD. Actually, Hong Kong has a lot more progressive program. As stated, they took action immediately. In fact, with regard to avian influenza, at first we had placed Hong Kong on the initial list. Hong Kong came to us with the data and support that we needed to be able to remove them from that list, assuring us that they no longer had the H5N1 Asian strain in their domestic poultry population, and in fact it never got into the poultry population. I think it was a particular wild bird, or an eagle, or something. I cannot remember.

Ms. ELVANDER. It was an egret and a Peregrine falcon.

Mr. CLIFFORD. Egret. Yes. There you go. Thank you very much. They had found it had H5N1 in subsequent cases.

Mr. FOARDE. Thanks very much.

Mr. DORMAN. Good. Next, I would like to turn the questioning over to Will Leahy, who is a Research Associate with the Commission. Of course, as our witnesses know, Will did all the difficult work that helped put this roundtable together today. So, thanks for that, Will.

Mr. LEAHY. I just want to thank all three of you for being here. It has really been very helpful.

My question builds on the one that John Foarde asked. Recently, the WTO's top pandemic flu official described Hong Kong's practices as the gold standard in flu prevention. Ms. Elvander, you said that clearly Hong Kong is a unique situation, but I was wondering what best practices you think could be taken from Hong Kong and realistically applied to the mainland. If that is something that all of you feel comfortable commenting on, that would be great.

Ms. ELVANDER. I am going to turn to my Agriculture Department colleague for this response.

Mr. CLIFFORD. When you are talking about best practices, I think, you are talking about good biosecurity practices, you are talking about good surveillance activities, you are talking about in-

centives for producers to be able to submit sick birds. But on the human health side, you mentioned issues about the way animals are slaughtered and good hygiene practices. So, all of those things are critically important to this issue.

There is a long list of things that can be done, but again, I think that requires a tremendous amount of training and capacity to get in there and train and to develop that infrastructure and capacity to be able to do those things and sustain them.

Ms. ELVANDER. From a human health side, I would also say that one of the great things that you find out about surveying and getting good data on human cases of avian flu is that you find all the other influenza-like illnesses that can start tracking your seasonal flu.

This is one of the things that we have learned from our activities with our partners in Bangkok, with whom HHS has had a partnership for over 25 years in the Ministry of Public Health—they actually now know when their seasonal flu happens and they can predict and plan for that sort of thing, which, from an economic standpoint, means you can plan for when you are going to have worker shortages. Then you can also start to be predictive for your pandemic flu. Hong Kong has the political will and the financial will to do those things as well.

Mr. DORMAN. Next, I would pass the microphone to Carl Minzner, who is a Senior Counsel on the Commission. Carl.

Mr. MINZNER. Thanks to all three panelists for coming here to talk to us today.

On Wednesday, the Chinese central authorities in the Party and the State Council released “their number-one document” setting out some of their leadership priorities for the coming year. It has a strong focus on rural reform. Two issues in particular that they flagged are larger investment in rural healthcare, particularly over the next two years, and the development of rural health clinics.

Assuming Chinese authorities pursue reform of the healthcare system, what specific suggestions might you have for things they might include in the development of relevant projects for the purpose of warding off an avian flu pandemic?

Ms. ELVANDER. I will try to answer that question. I think Bates and I have known for a long time that the biggest domestic priority for health in China right now is their rural healthcare. Minister Gao said as much to Secretary Leavitt in October when they visited together; he said it again in several forums. There have been a number of white papers from China.

It is very clear to everyone that China has a healthcare delivery problem, and that public health, primary care delivery, ensuring preventive healthcare, like immunizations, things like that, are all things that are going to be important to any rural healthcare reform.

I am not by any means a health economist, so I am not going to pretend to address those kinds of issues. I will say that HHS and the Department of Commerce have had a joint activity with the Chinese on healthcare and healthcare delivery with their Ministry of Commerce and Ministry of Health. They had a two-day forum in July and that began a process for us to interact with them.

There was one other thing that I was going to say and it slipped out of my head. Oh, yes: one piece of evidence to show that China really has to invest in preventive healthcare is the data that we have in the Western community demonstrating that folic acid supplementation alone in the first trimester of pregnancy dramatically lowers the risk of neural tube defects. This data comes from China, but it is not being used there. It comes from a long-term HHS-Ministry of Health study of many women in Northern China, demonstrating that folic acid lowers rates of neural tube defects by some number that I cannot remember off the top of my head. But that data is not being used in China, and I think that demonstrates the need for them to commit to preventive healthcare.

Mr. GILL. Carl, it is going to be really interesting to see how this new, or renewed, attention to the plight of Chinese peasants is going to play out. We can hope it will play out in a positive direction, but there are big challenges. If we just narrow the focus enough to look at just dealing with infectious diseases in the local areas, I guess there would be, I think, two areas in which one would have to focus.

One, obviously, is on the technical and the capacity building side. At the village level, persons at the village level who are known as “doctors” are really lucky to have completed high school. They might have received some basic training in first aid and are able to dispense drugs and diagnose some simple ailments. So, obviously, if we are worried about these sorts of things emerging at that level, some sort of technical and educational capacity is going to have to be built there.

On the other side, though, I think—and I have tried to make a point of this in the testimony—is how the economics of healthcare in China are structured. I am not a health economist either, but one thing that is going to have to be done is to build incentives into the remuneration structure of physicians and other healthcare workers so that they would be more prone, willing, eager, and able to be more proactive in a preventative way and not simply wait for the patient to show up and give them money, if that is a possibility. The other side of this coin is the health insurance problem. It has gotten so bad, the market has become so expensive for the delivery of healthcare—and this is not just true in China, but in many parts of the world, including our own—you do not do anything until you are sick because you cannot afford to see a doctor.

As we know in our country, that is not an optimal situation, especially when you are talking about infectious diseases. I am encouraged to see that the government recognizes the problem and appears prepared to devote political and financial resources to it, but I think, as outside observers, that this is going to take a long time to restructure.

Ms. ELVANDER. One thing I would note is that the World Bank is aware of this issue. I think you will be finding some interesting data and strategic planning coming out of the World Bank in the coming months about this problem.

Mr. DORMAN. Good. Thank you very much.

I would like to turn the questioning over next to William Farris, who is a Senior Counsel on the Commission. William.

Mr. FARRIS. Thank you.

Some of you have touched on the issue of local and provincial officials concealing information, possibly for economic reasons. I would like to ask a question related to that. The Chinese Government prevents people from publishing newspapers and magazines and practicing journalism; unless they have been licensed by the government, it is illegal. I would be interested in getting your assessments of the Chinese Government's contention that one of the reasons that this licensing is necessary is a fear of people spreading false news about issues similar to this one. I want to also get your ideas or thoughts on how you think a free and open system for foreign press—Reuter, AP, wire service stringers—being able freely to go into China and report and cover these issues might enable the international community to have a better capacity to monitor the potential spread of this disease in China. Thank you.

Mr. GILL. I will take that little hot potato. [Laughter.] I think all governments have a right to be concerned about the spread of false information. I mean, that concern is not unique to the Chinese Government. So, we have to be somewhat sympathetic to that concern. I think they probably do overplay it in a way so that they can better control, or have justification to better control, what kind of information the public is hearing and seeing. It is unfortunate, I think, that there is not a greater degree of independence among journalists, whether they are from China or from abroad, so that not only this sort of social health problem could be more readily recognized and dealt with, but other problems beyond the healthcare issues could also be addressed, and to introduce a greater degree of accountability or oversight, a watchdog function that the press can often play.

I think, though, that we should not expect that this sort of control on the press in China is going to change any time soon, especially with regard to foreign journalists. We have to accept there has been a remarkable opening as compared to 10 or even 20 years ago and marvel at the degree to which foreign journalists can, and do, manage to get around the country and report quite remarkable stories about what is going on at local levels in China. That has happened, but obviously issues of such sensitivity as the effectiveness of local officials, or even the malfeasance of local officials, is something that, for the foreseeable future, the Chinese are going to be very reluctant to allow a lot of reporting on. So I take your point. I think it would be a big help, both for Chinese journalists and foreign journalists. I just think that we should not have overly high expectations that that is going to be able to happen anytime soon.

Mr. DORMAN. Good. Thank you.

Next, I would like to turn the questioning over to Pamela Phan, who is a Counsel on Commission staff. Pamela.

Ms. PHAN. I just wanted to echo our thanks to the panelists for coming and sharing your expertise with us here today.

I have questions regarding the risks of smuggling. I am hoping that the panelists can help us better understand the use and effectiveness of not only preventive, but also punitive, measures.

With respect to preventive measures, aside from compensation, are you aware of any other specific incentive schemes that have been discussed or may be available, which would involve participa-

tion by the public—particularly the poultry farmers whose livelihoods are affected by the culling of chickens?

With respect to punitive measures, I am wondering if you could provide your assessment of any punitive measures that might exist, such as criminal sanctions or criminal punishment of those who smuggle or might be related to smuggling issues.

Mr. CLIFFORD. A point of clarification. Is your question related to China specifically, or even within the United States?

Ms. PHAN. Both.

Mr. CLIFFORD. I can speak to what we do in the United States. We actually have within the United States, besides the Department of Homeland Security's Customs and Border Protection component that would look for and be involved with smuggled products at our ports of entry, within APHIS and plant protection and quarantine, we have smuggling and interdiction teams that actually are trained full-time in looking for smuggled products. I cannot quantify it for you today, but basically they have been very effective in being able to find and confiscate smuggled products that have come into the United States. In fact, \$7.5 million of the President's supplemental request is to bolster and enhance that effort by APHIS in that area.

We also have penalties in place that we bring against smugglers that are part of both the Animal Health Protection Act, as well as the Plant Protection Act. Those penalties can be substantial, depending upon the case.

Mr. GILL. I might just say a couple of words. It is my understanding that there are regulations on the books in China, at least issued at the central level, that farmers need to be compensated for their animals, or chickens or other poultry, that are culled. But it is also my understanding that there is a sort of caveat within the regulations that says "depending on local conditions," in other words, basically leaving it to local officials and local financial resources to make a determination about what level of compensation is going to be adequate and necessary to the farmers. So, it clearly leaves a wide-open scope for malfeasance or just simple non-payment, whether that is through some sort of corrupt practice in which the official ends up pocketing that allocation, or it could also be that there just simply is not the money to do it at local levels. So I think the situation is ripe for abuse or ineffectiveness.

On the punitive side, I am not aware of there being any national law which specifically addresses the question of avian flu-related criminal activity. There are other laws, however, that relate more broadly to knowingly spreading infectious disease and other, I think, more broadly interpreted regulations under which someone could probably be punished.

But it gets down to what it is that the local level wishes to do. You can bet that there is a law that could be applied to a farmer if somebody locally wanted to have that law applied, and then that farmer would have little recourse.

What this really boils down to, both on the incentive and the punitive side, is the unpredictability of the Chinese legal system and the lack of the rule of law, which, in a certain case, could actually exacerbate this problem because the farmer (A) cannot be guaranteed that he is going to be incentivized correctly; and (B) he is also

uncertain of just how badly he might get punished if he does something wrong. Both of those, I think, could be recipes for suppressing information, hiding, putting things under wraps, trying to avoid reporting a problem if you might have one.

Mr. DORMAN. Good. Thank you.

A question for Dr. Clifford. Two-part. Is China a member of the OIE? If so, what sort of obligation or expectation is there that the Chinese Government would allow independent verification of disease reports?

Mr. CLIFFORD. Actually, I do not think China is a formal member of the OIE. I am not sure how to describe China's standing with the OIE, so there are some issues there, but it is my understanding that they are part of the WTO. Therefore, commitments under the WTO would require them to base trade decisions and particularly restrictions upon good science, and the World Organization for Animal Health, the OIE, sets those standards for animal health-related issues.

Mr. DORMAN. Good. Thank you.

Ms. Elvander talked about Premier Wen Jiabao's statement, I think, at the January 2006 Donors Conference, where he pledged China's cooperation with international efforts to combat avian flu.

I would like to ask the panel, how significant do you judge this statement to be? We have seen in the past where a statement from China's most senior leadership on an issue like this would have a strong impact on implementation and cooperation at both the central and local levels.

Is that the first statement from China's most senior leadership on this particular problem? If so, how should we judge that statement?

Ms. ELVANDER. This is the first such statement that I am aware of, although when Secretary Leavitt and Minister Gao met in October, Minister Gao admitted to openness around human cases. I think the key piece of Premier Wen Jiabao's statement, though—it is interesting—is that he announced that the Chinese Government would contribute \$10 million and reaffirmed that the government would release the genetic sequences of influenza and viral strains. He did not say, however, that Chinese authorities would actually share virus isolates and samples, which I think is a key piece here.

We have seen that the Ministry of Health wants to collaborate with WHO and has been quietly doing so, but we have also seen that the Ministry of Agriculture has not. So, the commitment to transparency was couched in those terms. Nevertheless, I think that with the commitments we have seen with other diseases, such as with HIV and with SARS, et cetera, that a commitment on such a high level does permit leadership both on the central level, and then flowing down to the provincial and local level, to at least start going through the motions of being engaged.

The other piece of this is that this is not just a human health disease, it is a multiple-ministry disease. As Dr. Gill has noted, the Chinese Government's decisionmaking system is stovepiped. So until Premier Wen says "thou shalt collaborate with your colleagues in the Public Security Bureau, the Ministry of Agriculture, and other ministries. . ." it is probably not going to happen. So, I

do think that is a positive sign. I do not know if others want to comment.

Mr. GILL. I agree. I think you are aware of the difficulties across the bureaucracy for coordination in China, although I think we have seen a lot of interesting steps taken at the central level to try to improve that and to establish more of what we might call an inter-agency process. I note in the testimony, for example, that apparently in November 2005, a kind of cross-bureaucratic office for avian flu prevention was created, which is intended to bring together six different agencies concerned with the various issues, food security, animal health, and medical prevention science. At least on the books, we are seeing a level of cooperation. It does take something like a statement from Wen Jiabao to get people to act a little bit more forcefully on these fronts, but I think it is still too early to tell what the result will be.

But, to the degree that our government could do it, it would not be a bad idea to seek some sort of cross-bureaucratic exchange, which would force mobilization of that kind of inter-agency process in China.

Mr. DORMAN. There is a rather remarkable article in the Wall Street Journal today. I am not sure if you have seen it, but it moves the discussion away from a simple lack of transparency or coordination, and instead points directly at the chief veterinarian in the Chinese Ministry of Agriculture as the source of the decision, and further describes concerns by Chinese scientists over attribution as a key reason disease samples are not being shared.

Apparently, in the past some research generated by Chinese scientists was used in articles outside the country, but was not properly attributed, and this has led to the current block.

The article very carefully points out that China is not alone in this sort of phenomena, and describes a similar situation that occurred in the United States.

That was the lead-in to this question: is there a scientific reason that China would not be sharing information regarding scientific samples on diseased poultry?

Mr. CLIFFORD. Not from the animal health side that I would know of.

Ms. ELVANDER. There is a degree of face. I mean, we saw, with Vietnam, their neighbor to the south, a rather critical article in Nature come out right before the World Health Organization meetings last year, and Vietnam felt very much affronted by what they perceived as untoward criticism. It took a lot of ground work by staff in Hanoi with the World Health Organization and other donors to regain the momentum that we had in collaboration with the Vietnamese on this particular issue, to get that going again. China wants to be an international partner, so does Vietnam, so there is a degree of face involved. But as far as for scientific reasons, there is absolutely no reason not to share.

Mr. DORMAN. Good. Thank you.

I will turn the microphone over to John Foarde for another question.

Mr. FOARDE. Thank you, Dave.

One of the sets of issues that we are really interested in understanding better on the Commission staff is differences between

regions in China and the way laws, regulations, policies are formulated and implemented, and even differences within provinces and localities.

So, Erika, you made a comment, I think, about the source of live poultry for Hong Kong being—and correct me if I misinterpreted—Guangdong province, which is right next door, and then Shandong province in the northeast. Right?

Ms. ELVANDER. Yes.

Mr. FOARDE. That raised in my mind the question whether or not you are seeing any differences between the two provincial governments and how they handle either the animal or the human disease prevention and control efforts with respect to these exports?

Ms. ELVANDER. Go ahead.

Mr. CLIFFORD. I was just going to say, I would not be able to respond to that at this time.

Ms. ELVANDER. And I cannot really answer about the animal health aspect, and I cannot really address Shandong province. I will say that, after SARS, Hong Kong felt very much like, “here we are at the edge of it, and it all happened in Guangzhou.”

So they have been able at least to establish conversations with the Guangzhou Department of Health that do not have to get vetted by Beijing, and I think that was very important for them from a human health perspective. I cannot answer the rest of your question.

Mr. FOARDE. I appreciate your trying anyway.

Ms. ELVANDER. All right.

Mr. CLIFFORD. We will see if we can find out some more information for you.

Ms. ELVANDER. Yes.

Mr. FOARDE. I wonder if this is something that your folks at the U.S. Embassy in Beijing even have time to track.

Mr. CLIFFORD. We will see what we can do.

Mr. FOARDE. It is something that, when I was assigned to the U.S. Embassy in Beijing, we were always trying to figure out in another context and did not do as well as we would have liked.

Bates, you were talking in your presentation about challenges ahead, and one of them, of course, is lack of public awareness, especially in rural areas. One of the things we are interested in is the whole question of the Internet and the use of the Internet for just this type of public purpose.

Here in the United States, really from the beginning of the time that we had Internet access, you had Web MD and all kinds of other public health Web sites, some of them of very high quality and some of them not so high quality. Do you think that the Internet or Web resources could have an impact on the availability of information in rural areas for rural people in China, and is that an area that the government could invest in productively?

Mr. GILL. I think the answer, obviously, is yes. I would assume that there are similar resources already available in China. I do not know for a fact, but I am assuming they would be. Surely, if not mainland generated, then mainland-based individuals could surely access useful information from other places, such as Hong Kong, Singapore, and elsewhere. The problem, obviously, is that this most recent estimate that there are 111 million Internet users in China today, which is a fantastic number given where it was

even five years ago, that is still less than 10 percent of the country's population. Obviously, it is predominantly concentrated in the wealthier eastern coastal region.

So if an Internet network answer were to be feasible, it would require, I would assume, infrastructure of all kinds. I suspect that we will see China leapfrog once again, and perhaps down the road as part of this effort to modernize, what are they calling it? "Countryside socialism," or something like that. We may well see yet another leapfrog, where this kind of information would not necessarily have to be channeled out to the remote parts of China through fiber, but would rather be done wirelessly, and just leapfrog over the whole land line idea entirely. That is within reach.

I suspect, if that becomes a greater reality, that we will see more and more of that in the Chinese countryside.

Mr. DORMAN. We have time for, I think, two more short questions, so I will give one to Carl Minzner to ask.

Mr. MINZNER. Dr. Gill, you flagged the possibility of cooperation between Chinese and U.S. civil society organizations as a positive development. Dr. Clifford and Ms. Elvander, you flagged inter-governmental cooperation as a positive step. What restrictions or problems currently exist on that cooperation, and what usefully could be done to address this? You mentioned particularly that there was some information that you had difficulty getting directly out of your counterparts in Beijing. What usefully could be done to advance cooperation between relevant organizations?

Mr. CLIFFORD. I think that some of that cooperation is happening through the Memorandum of Understanding we talked about, the agreement we have over the next five years. We are talking about more technical level discussions. Also, we have got, through our Foreign Agriculture Service within USDA, there is actually a group of Chinese officials, about 15 to 20, who are going to be visiting the United States soon, and we are going to be taking them through how we do risk assessments, how we handle SPS issues, and just give them a flavor and background of how we handle rulemaking and things like that, to try to have a better collaboration and understanding of the different approaches and systems. So, I think we are doing that.

Ms. ELVANDER. I would echo my colleague from Agriculture's comments. As I said, last year the HHS funded \$34 million worth of activity within China. Now, most of that was through NIH grants, and 90 percent of NIH grants go to academic institutions. They are "extramural," which means that grant funds go to Harvard, UCLA, but also some directly to the Chinese, and, I think, building that staff level partnership.

We also signed this Memorandum of Understanding in October that is going to expand the number of people we can place in China, and I think the trust issues will build from there. We will be able to demonstrate that we view them as partners, technically and scientifically, but provide that technical assistance. I think it is a case of trust in that particular case.

Mr. GILL. As you probably are well aware, there is an enormous amount of activity being undertaken by private entities, philanthropic organizations, charities, faith-based organizations, foundations, and even think tanks over in China, and doing it, I would

say, predominantly on what we might call a private/public basis, that is to say, private foreign organizations that are working, at least at the initial phase, with government-related entities, and even directly with bureaucracies.

So I think the model is clearly there, and I think on the issue of health in particular, it has been flagged as an area, I believe, where the Chinese are prepared to expand that kind of activity, even well beyond our relationship with strictly government entities, but I think there is even an opening to improve more private-to-private or NGO-to-NGO type activity. So, I think there are some promising ways forward there.

Mr. DORMAN. Well, unfortunately our time is up. I actually have to apologize to our witnesses because we have kept you a few minutes longer than we promised already. I would also like to thank all of you again for sharing your knowledge, insights, and expertise.

This topic is important to our Commissioners, and each of you has done a superb job in illuminating the issue, and providing ideas to improve cooperation and efforts in this particular area.

Before I call the roundtable to a close, I would like to remind everybody in the audience again that the next public event by the Commission will occur on March 6. It will be a full Commission hearing, chaired by Senator Hagel, that will look at the issue of human trafficking in China. It will be held in the Dirksen Senate Office Building, Room 419, 2 to 3:30 p.m.

So with that, on behalf of our Chairman and Co-Chairman, I call this roundtable to a close. Thank you very much.

[Whereupon, at 3:37 p.m. the roundtable was concluded.]

A P P E N D I X

PREPARED STATEMENTS

PREPARED STATEMENT OF JOHN R. CLIFFORD

FEBRUARY 24, 2006

Thank you very much for asking me to take part in this roundtable discussion. My name is Dr. John Clifford, and I am the Deputy Administrator for Veterinary Services with the Department of Agriculture's Animal and Plant Health Inspection Service, or APHIS. In this position, I also serve as USDA's Chief Veterinary Officer.

We in the Federal Government take the threat posed by avian influenza very seriously, and we're committed to working to carry out the President's National Strategy for Pandemic Influenza.

USDA has many key roles to play as outlined in the National Strategy. In my mind, though, one of the most important is our involvement overseas to help affected countries take steps to combat the Asian H5N1 highly pathogenic avian influenza virus at its source—in poultry populations.

Representatives attending last month's International Ministerial Pledging Conference on Avian and Human Pandemic Influenza in Beijing, China, also recognize the importance of a coordinated global effort to address this disease. According to the European Commission, cosponsor of the conference along with the World Bank and the Chinese government, a total of \$1.9 billion was pledged by the attending countries. This funding will help affected countries fight outbreaks of the Asian H5N1 avian influenza virus and also assist neighboring countries in efforts to prepare for any related human health issues.

During the conference, President Bush announced that the United States will provide substantial funding—\$334 million—to support the global campaign against avian influenza. This represents the largest single national contribution thus far to these global efforts. Resources will be used, among other things, to assist countries with national preparedness plans, improve surveillance and response systems for domestic poultry, and to provide assistance in establishing wild bird surveillance programs.

As part of this funding I just mentioned, USDA received \$18 million to advance collaboration with international organizations to help countries in southeast Asia take steps to enhance their veterinary infrastructure and adopt other practical, effective programs against Asian H5N1.

My boss, APHIS Administrator Dr. Ron DeHaven, has traveled recently to Southeast Asia to assess the animal disease situation in several countries and the steps being taken in response. The information and observations he collected are helping USDA develop its plan to work with international organizations, primarily the United Nations' Food and Agriculture Organization, to deliver the best possible technical assistance to these countries. By effectively combating this disease in birds, I am confident that we can help lower the virus load in countries and prevent spread to humans, thereby reducing the likelihood that this particular highly pathogenic avian influenza will mutate into a virus capable of spreading not only from birds to humans, but then from person to person.

Before I speak more about our international efforts, including those related to China, I'd just like to say a few words about the steps we're taking domestically to protect against the introduction of the Asian H5N1 avian influenza virus into the U.S. poultry population. These programs—many of them longstanding—are every bit as critical as the efforts we're undertaking overseas to help protect the United States.

USDA is keeping potentially infected poultry and poultry products from countries affected by the Asian H5N1 virus out of the United States through import restrictions. We quarantine and test all live birds imported into the United States to ensure that they are disease-free. We carry out an aggressive surveillance program that looks for any signs of illness in the commercial U.S. poultry flock. We're also on the lookout for smuggled birds or products from overseas that could harbor the disease.

USDA also maintains a stockpile of avian influenza vaccine should the need arise to vaccinate commercial poultry as part of a virus control and eradication effort. And, we are making sure that our State-level response plans in the event of a disease detection are constantly updated and take into account all the steps necessary to address the situation.

In total, the funding I mentioned a moment ago also directs \$73 million to USDA to enhance these and our other domestic avian influenza related efforts.

H5N1 AVIAN INFLUENZA IN CHINA: TIMELINE

I think the best way to frame our discussion of avian influenza in China is to trace significant developments in chronological fashion. I'll then be happy to answer your more specific questions.

Evidence seems to suggest that the Asian H5N1 avian influenza virus emerged in southern China and Hong Kong in 1997. We know, too, that the virus did not start causing mortality in large numbers of birds in China until late 2003. In response to the escalating animal health situation, in January, 2004, APHIS and the U.S. Centers for Disease Control and Prevention issued emergency import restrictions on poultry and poultry products from China and seven other countries in east and southeast Asia.

It's important to note here, however, that APHIS has had longstanding prohibitions in place on live poultry and poultry products from China (as well as most other Asian countries) due to the widespread presence of exotic Newcastle disease, another significant poultry disease, in that region of the world. So no significant quantities of live poultry or poultry products from China or other countries in southeast Asia were being imported into the United States. Again, though, in 2004 we felt it a prudent step to issue the emergency import restrictions due to the threat the Asian H5N1 virus poses to animal health, as well as concerns by public health officials that the virus could potentially have human health implications.

Later in 2004, APHIS placed restrictions on imports from all countries reporting detections of the Asian H5N1 avian influenza virus in poultry. These further restrictions prohibit the importation of all live birds, including those previously allowed entry provided that the birds went through a lengthy post-entry quarantine period; all feathers and feather products, including those treated overseas or imported into the United States for treatment; and processed or rendered poultry products for human use or consumption.

In the summer of 2004, China requested that APHIS consider regionalizing the country to enable the trade of poultry and poultry products from areas of the country unaffected by the Asian H5N1 virus. Regionalization is a tenet under the World Trade Organization's Sanitary and Phytosanitary (SPS) standards agreement. APHIS considers all such requests, and, in order to do so, we requested on several different occasions that China provide us with information on the disease situation in the country and steps being taken in response.

China, to date, has not provided us with this information; therefore, APHIS has been unable to begin considering the regionalization request. I'd also add that while China has reported cases of the disease to the International Animal Health Organization (OIE), there has been no independent verification of those reported detections by agencies outside of China. We commend China for reporting detections to the OIE, but we also feel that officials need to be much more transparent and forthcoming with information on surveillance testing, disease control and eradication measures, and related information.

Along these same lines, I'd like to acknowledge China's lifting of its import ban on all U.S. poultry and poultry products, put in place following the detection of a high pathogenic avian influenza virus in a flock of 6,600 birds in Texas in February, 2004. That detection was quickly contained and eradicated without any further spread to poultry, or any human health implications. It is a testament to the excellent surveillance and emergency response plans we have in place for serious poultry diseases here in the United States. APHIS provided China with information on the detection and related issues in August, 2004. Chinese officials removed the ban in October, 2004, and U.S. product began moving to the country again in January, 2005.

NEXT STEPS

As I said at the outset of my remarks, USDA believes that a coordinated effort to address Asian H5N1 avian influenza in poultry populations in affected countries is among the most important steps that can be taken to prevent against a pandemic situation. In support of this, APHIS and USDA officials have certainly been keeping an active international travel schedule. In July 2005 we attended the symposium on international animal health standards for the member economies of the Asia-Pacific Economic Cooperation group, as well as the October 2005 meeting of senior officials from the International Partnership on Avian and Pandemic Influenza, a group of key nations and international organizations launched by the United States in September 2005. In addition, USDA participated in a November 2005 meeting on avian influenza and human pandemic influenza organized by the OIE, the World Health Organization, the FAO, and the World Bank. We were also a part of the

WHO's December, 2005, meeting to develop an international unified strategy to control the Asian H5N1 virus in birds.

In regard to China, APHIS and USDA officials met with their counterparts in Beijing in November, 2005, as part of a poultry health symposium. Much discussion took place on issues such as regulatory measures, disease surveillance, and international animal health requirements for the disease. This meeting was followed by the WTO Ministerial meeting in Hong Kong in December, 2005. During the meeting, an annex was approved to the Memorandum of Understanding in place between USDA and China's ministry of agriculture. The annex details the formulation of working groups that will meet on a regular basis to discuss technical animal and plant health issues. We are currently working to arrange the first meeting of the animal health working group and our goal is to engage in a sustained dialogue with our Chinese counterparts on many important issues, chief among them domestic surveillance in China for Asian H5N1 avian influenza.

It is our strong desire that this type of regular communication with Chinese officials will help encourage further transparency on the animal disease front. It is our hope, too, that China will engage more fully in the international efforts to formulate effective strategies against the Asian H5N1 avian influenza virus.

With that, I'll conclude my statement. Thank you again for the opportunity to be here today. I look forward to your questions.

PREPARED STATEMENT OF ERIKA ELVANDER

FEBRUARY 24, 2006

In December 2003, the global community learned of reports from Korea of its first ever cases of Avian Influenza (A) H5N1. Shortly after this, H5N1 appeared among poultry in a number of countries in East Asia, including Thailand, Vietnam, and China. Since then, H5N1 has spread to Central Asia, Europe, and the Middle East. As we know, in recent weeks Nigeria reported the deaths in its northern provinces over 40,000 birds from H5N1, bringing the disease to Africa. In addition to these avian cases, human cases are appearing sporadically across the globe. As of February 20, 2006, the World Health Organization (WHO) confirmed 170 human cases, of which 92 have been fatal. In all but a very few cases, all confirmed human cases could be linked to contact with sick poultry or animals.

While 92 human deaths may not be considered significant in the context of other diseases such as tuberculosis and HIV/AIDS, the high rates of mortality, the lack of predictability about who could contract the disease, and fears of genetic changes within the virus that could create an environment for efficient human-to-human transmission, cause great concern about human cases of H5N1. Globally, the emergence of a new strain of influenza with pandemic potential has public health officials extremely concerned. Thus multi-lateral organizations such as the WHO, the World Organization for Animal Health (OIE), and the Food and Agriculture Organization of the United Nations (FAO), as well as larger donor governments such as the United States, Japan, and the European Union, have begun to apply political pressure and provide financial and technical assistance to help countries around the world affected by the animal disease epidemic in hopes of stemming a possible human pandemic.

Influenza (A) H5N1 is one of many strains of influenza or flu, of which only some affect humans, or birds, or both and some that affect other species such as pigs and cats. Not all strains are highly infectious or cause high rates of morbidity and / or mortality. The fact that influenzas change and mutate is why specialists carefully watch flu strain patterns every year to predict which strains will be responsible for the regular, seasonal human flu which causes about 36,000 deaths in the United States a year.

Beyond seasonal flu, H5N1 specifically, is of concern for a couple of reasons. First, flu pandemics tend to come in cycles of thirty to fifty years. The "Spanish" flu pandemic of 1918 is thought to have caused between 20 and 100 million deaths worldwide, and more than 500,000 deaths in the United States. While subsequent pandemics have been less deadly (the last true flu pandemic occurred in 1968 and caused 1 million deaths across the globe), the specter of the 1918 pandemic lingers on. Second, the H5N1 strain in circulation among animals seems to cause extremely high rates of mortality when it infects humans. Third, while vaccines specific for H5N1 are in development, they are still being tested and if proven to be effective, will take time to manufacture and distribute. In the interim, other drugs, such as amantadine and oseltamivir (Tamiflu®) are in limited supply and are of limited use.

While it is clear that direct exposure to diseased birds seems to be a necessary link in humans contracting disease, other information about how, when and why H5N1 causes disease in its victims is still a mystery. The ability of flu viruses to mutate quickly causes public health officials to be on the lookout for sustained human-to-human transmission. This makes health ministers lose sleep at night and their agriculture counterparts toss and turn worrying about the drop in trade that the die-offs in poultry are causing.

H5N1 has appeared before. It first appeared in Hong Kong live bird markets in 1997. Appearing to only affect chickens at first, public health officials became worried when six people died from H5N1 as well. Alarmed by what appeared to be a possible harbinger of a pandemic, the Hong Kong Health Authority led by Dr. Margaret Chan (now with the WHO) made the courageous decision to order the destruction of every single chicken, duck and egg in Hong Kong. Over 1 million birds were culled and human cases of H5N1 seemed to abate at eighteen cases and six deaths. Biosecurity measures in live markets were put in place that ensured better separation between humans and poultry; and policies were instituted that ensured tissue and blood samples from every shipment of poultry from China (mostly Guangdong and Shandong Provinces, where most poultry in Hong Kong originates) were taken and tested for H5N1. The goal was an effective animal surveillance system that would catch a possible outbreak before human cases could occur.

H5N1 did reappear in February 2003 when two human cases were detected in Hong Kong from travelers returning from Southern China, suggesting that H5N1 was still circulating at least among domestic poultry during the prior year. While the Ministry of Agriculture of China never officially confirmed new avian cases linked to these human cases, these cases were quickly overshadowed by what became the Severe Acute Respiratory Syndrome (SARS) outbreak that dominated public health and global media attention in the Spring and Summer of 2003. When Korea reported its first ever case of H5N1 in December 2003, the current outbreak officially began.

A couple of words on Hong Kong. Hong Kong is, of course, a unique situation. In 1997, Hong Kong became a Special Administrative Region of the People's Republic of China. However, with the "two systems, one government policy," it is still, to a large extent, an economic entity separate from the mainland with different infrastructures, business practices, and economic development. Then as now, China cannot afford to lose the technological, economic, and academic advantages that Hong Kong brings to it, and thus allows it to continue to function—at least economically—at some level on its own. Further, Hong Kong is always at "Code Orange" for avian influenza and as such maintains animal husbandry and biosecurity practices far different than most of rural mainland China. As such, until as recently as last month, Hong Kong managed to keep itself relatively H5N1 free, even in the face of continued outbreaks around. And, while no human cases from Hong Kong have been reported, it has an urban population still smarting from the memories of SARS, the economic wherewithal to pursue these high-level biosecurity measures, the geographic limits, and the community will to maintain this "orange alert" status for H5N1.

As many of you know, recently Hong Kong reported H5N1 cases in native magpies, which has caused great concern for local health authorities, who fear H5N1 may have been brought to Hong Kong from the mainland, and, worse yet, that H5N1 may now be endemic within the territory. Indeed, scientists support their suspicions of importation of the disease from China, as recent studies from Hong Kong and funded by the National Institutes of Health of the U.S. Department of Health and Human Services have demonstrated that the H5N1 virus endemic throughout China is the likely source of outbreaks among poultry in surrounding countries and territories.

Now then to China. As you know, about 60 percent of its population lives in rural areas. There are (or were) 15 billion domestic fowl in China last year. That is to say, one fifth of the world's poultry—mostly chickens—but also significant numbers of ducks, turkey and geese—raised for domestic consumption come from China. China has both large scale production facilities and family "backyard" farms. Indeed, most rural families have 10–25 chickens and ducks, which are kept for food and income.

So what is a country scared by their SARS experience and faced with an economic and possible public health disaster like H5N1 to do? As my colleague from USDA will discuss, outbreaks among birds must be contained, monitoring and reporting of suspect animal and human cases must continue in a transparent manner. However, given that most strategies for containment among birds include the culling and eradication flocks where exposure to H5N1 is suspected, posing a huge loss for farmers, the disincentives for reporting animal cases are high. Compensation for lost

flocks is a complicated issue that an economist can address far better than I can. Further, for countries that export poultry (and China is one of them—mostly to Japan and Hong Kong) reporting cases to the international community can be viewed as a trade risk, and economic considerations sometimes take precedence over public health concerns.

Having said that, lessons learned from HIV and SARS both appear to have encouraged China to recognize the need to investigate openly and report at least suspect human cases of H5N1. Up until the summer of 2002, China continued to deny that HIV/AIDS had epidemic potential within its borders, preferring to place blame on outside influences. As my colleague from CSIS knows too well, United Nations organizations, donor countries such as Japan and the United States, as well as non-governmental organizations like CSIS applied both public and private pressure on the government of China, trying to convince them that the economic and health impacts of not acknowledging and dealing with a burgeoning HIV/AIDS problem were far greater than continuing to deny it.

As result, Chinese officials began to open up internationally (and more importantly, domestically) about HIV/AIDS in China. Within a year, China successfully competed for a \$32 million two-year HIV grant from the Global Fund to Fight HIV/AIDS, Tuberculosis, and Malaria. At the same time, the United States and other donors made financial commitments to China's Ministry of Health for both research and technical assistance in confronting HIV. China had learned that openness about public health issues of global concern would not necessarily bring shame, but might actually bring financial resources.

However, the lessons from HIV/AIDS did not seem to apply until late in the game with SARS. Reports of a strange new respiratory illness with high levels of mortality began to appear in late February 2003. When, what became the SARS outbreak finally ended later that summer, over 8000 cases would be reported, with 775 deaths, in 30 countries on 6 continents. As noted earlier, public health practitioners were originally concerned that the SARS outbreak was the next flu pandemic and indeed, two early suspect SARS cases proved to be H5N1. Early on, Chinese officials were concerned about the impact an outbreak of disease of unknown origin would have on travel on the Chinese New Year—the largest travel day of the year worldwide. The government chose to delay entry to international experts, and continued to question if SARS had epidemic potential domestically. It was only when rumors about the disease began to have an impact on tourism, as well as rising international outcry at cover-ups, that China opened its borders to scrutiny, but as usual, in a carefully monitored and controlled fashion.

And, by the end of the SARS outbreak, according to the World Bank, the impact on the Gross Domestic Products of countries in the region was between 0.4 and 0.5 percent, between \$20 and 25 billion. In the process, a number of high-level Chinese officials, including the Minister of Health and the Mayor of Beijing, lost their jobs.

And yet, embarrassingly for China, it wasn't over yet. In March 2004, an accident at the National Institute of Virology of China in Beijing, China's premier virology laboratory infected two researchers with SARS and the Institute closed. By the end of the investigation, nine new cases of SARS were discovered, and one person died, all linked to the laboratory accident. While the global health community quickly commended the Chinese government for taking swift action in reporting the cases and for quickly closing the facility, the government lost its only internationally accredited laboratory with high enough bio-safety and bio-security to deal with infectious agents such as SARS and H5N1.

This double whammy of HIV/AIDS and SARS clearly affected the internal culture of the Ministry of Health. The WHO has positively commented on how quickly the Ministry of Health reports any outbreak of human disease. When the first suspect human case of H5N1 finally appeared (as many outside observers were predicting) in late October 2005, the Ministry of Health engaged the international health community in inviting outsiders in to work side by side with Chinese experts in investigating the cases.

I will note that China's idea of transparency and openness is still one with a degree of control involved. All decisions and reports on human cases are made by the central government not by local officials, which can add time to official announcements; further anecdotal reports suggest that some restrictions have been placed on the press. Government announcements come with clearly defined solutions already in play, suggesting that the government has the situation under control. Nevertheless, the Ministry of Health's willingness to open itself to international scrutiny is a huge step, and China, has been publicly praised internationally and promised further assistance in dealing with human cases as a result.

Unfortunately, the lessons learned from SARS by the Ministry of Health do not seem to have translated as well to the Ministry of Agriculture. For example, international observers have long suspected that H5N1 has been circulating among backyard poultry in China (the 1997 outbreak in Hong Kong supports this idea). Nevertheless, the Ministry of Agriculture reported no outbreaks of H5N1 to the OIE until April 2004, when other countries in the region reported cases. Further, when wild birds began dying in Qinghai in April 2005, the Ministry of Agriculture delayed allowing international scientists and observers into the actual areas where the deaths had occurred, citing so-called security concerns, although the deaths were largely in nature preserves.

Finally, late last summer, as wild and domestic birds continued to die across China, international observers were invited to see the veterinary laboratory in Harbin, which had tested tissue samples from dead birds. The Ministry of Agriculture continued to refuse to share samples from their avian cases with international bodies such as the FAO and OIE. Equally challenging, the Ministry of Agriculture refused to share samples with the Ministry of Health, claiming flatly that this was not a human health issue; merely an agricultural and trade issue. While the Ministry of Agriculture has recently been more forthcoming with reports of outbreaks, the timing of this willingness to share seems to coincide with both reports of human cases, large-scale Ministerial poultry vaccination campaigns targeted at the backyard farmer, and Wen Jiabao's January 2006 public commitment at the Beijing Donor's Conference to cooperate with the international community in containing the spread of disease in the region.

There is no question that we see an increased level of commitment and cooperation by the Chinese Government in addressing the avian influenza threat. Both in-country coordination between Ministries, and communication with outside organizations have improved. More importantly the Ministry of Health has shared samples from human cases through the WHO network. However, it is important to point out that human cases of H5N1 in China are often recognized prior to recognition of disease in poultry in the same locales, indicating the shortcomings of the animal disease surveillance and reporting system. In some of the human cases reported over the past few months, the victims came from regions in which no previous bird infections had been reported—even though the transmission occurred from contact with infected poultry. In general, areas needing strengthening include (1) surveillance—both human and animal; (2) general public and farmer awareness about the disease and the need to report; and (3) multisectoral cooperation.

China has also recently begun a policy of being both a donor and recipient of international assistance, reaching out politically and financially to partners in the region. Due to its economic progress, it has become ineligible for certain kinds of very-low or no-interest loans from the World Bank and its regional organizations. Even with the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria, China made a point of donating \$10 million to the Fund before becoming a recipient of its grants. More recently, China showed great leadership in hosting the Beijing Pledging Conference for Avian Influenza last month, and made a point of being a donor with a pledge of \$10 million.

Now, I would like to say a couple of things about the U.S. response to avian influenza, and then our relationship with China in particular.

As you know, the United States takes avian and pandemic influenza extremely seriously, and is mobilizing resources both at home and abroad to cope with a potential pandemic. The U.S. Government, for example, has formed the International Partnership to Fight Avian and Pandemic Influenza, affectionately known as IPAPI. Over 80 countries participated in the IPAPI's first meeting in October 2005, and activities under IPAPI to coordinate donor efforts, maintain transparency of data, and develop global strategies to prepare for and contain a possible pandemic continue to develop. At the Beijing Pledging Conference last month, \$1.9 Billion was raised for international flu efforts. The United States was the largest single country to make a pledge, with its pledge of \$334 Million in grant funding from fiscal year 2005 and 2006. (The World Bank made the largest overall pledge—\$500 Million in reprogrammed funds). These funds are for international efforts to prepare for and contain an avian and, possibly a human influenza pandemic.

While no specific amount is targeted at China as of yet (those decisions are being made as I speak), funds will be coordinated with other donor activities, and will be aimed at countries and regions where animal disease has recently appeared, or shows no signs of abating, or where there are human cases. In addition to these international activities, the U.S. Government has established a platform with China, the Program on Emerging and Reemerging Infectious Diseases, that will promote cooperation between the two countries on a number of infectious diseases, but first on avian influenza. This platform builds on long-standing health and science

cooperation between the United States and China that dates back to 1977. In 2004, HHS alone funded more than \$34 million worth of bio-medical research and basic public health activities with China and we foresee that figure increasing, not decreasing. HHS also has a staff of seven on the ground in Beijing, led by our Health Attache, Dr. Craig Shapiro. Because of an agreement that HHS Secretary Leavitt signed in October of last year, we hope to be able to increase that staff by as many as three bringing us to a total of 10, all aimed at emerging infections such as H5N1. It is our belief that by working with China as a partner to confront issues of public health important such as avian influenza, we will be able to create an environment that not only promotes scientific and bio-medical transparency and sharing of data, but also will improve China's public health surveillance and disease reporting networks, so that epidemics may be prevented and contained, not left to fester quietly. China, the fourth largest country with 1/5 of the world's population and 7 percent of the world's arable land, must be a partner in any global effort to prepare for an influenza pandemic.

Lastly, before I end, I would like to point you all to a number of valuable web sites for further information.

1. www.pandemicflu.gov is the U.S. government's primary site for all things flu. It includes the U.S. Government's national domestic plan for pandemic influenza and has links to HHS, to USDA, and other U.S. Government partners in the pandemic influenza efforts.

2. <http://www.who.int/csr/disease/avian—influenza/en/> is the web site for all things influenza for WHO.

3. www.oie.int is the web site for the OIE.

4. www.fao.org is the FAO web site. FAO has some great maps that show the distribution of H5N1 globally, and is also an excellent resource for information about food safety and economic issues and H5N1.

I have also brought copies of Wen Jiaobao's speech from the Beijing conference and am happy to share copies. Last, if you haven't already done so, I would encourage you to thumb through a copy of John M. Barry's, *The Great Influenza: The Epic Story of the Deadliest Plague in History*, Penguin Books, 2004. As you may have heard, this is the flu "bible" at HHS, and Secretary Leavitt, after he traveled to Southeast Asia in October 2005 (5 countries, 10 days, we were tired but he wasn't) gave copies of Barry's books to heads of state with key sections marked with post-it notes.

Thank you very much for your attention. I'm glad to answer any questions at this time.

PREPARED STATEMENT OF BATES GILL

FEBRUARY 24, 2006

INTRODUCTION

Let me begin by thanking the Commission Chairman and Staff Director for inviting me to provide my views this afternoon. I commend the Commission for taking up issues related to China's response to avian flu.

This is clearly an important and timely hearing. To date, the disease has spread from Asia to the Middle East, Europe and Africa with the prospect that it might also spread to the Americas and elsewhere. Without prompt and effective detection and containment, the spread of avian influenza could potentially cause severe human casualties and catastrophic socioeconomic consequences, and threatens regional and global prosperity and security. The World Bank has predicted that the first year of an avian flu pandemic could cost the world economy up to USD 800 billion.¹

With this in mind, and in response to the Commission's request, I have divided the remainder of this testimony into three parts, covering:

- A brief overview of the current situation concerning avian flu in China
- Steps that have been taken by the Chinese government in response
- Challenges that are remaining in China's approach to avian flu

¹BBC, "\$1.9 Billion Pledged for bird flu fight," January 18, 2006, accessed at: <http://news.bbc.co.uk/go/pr/fr/-/1/hi/world/asia-pacific/4622982.stm>.

A BRIEF OVERVIEW OF THE CURRENT SITUATION

China is not only the world's most populous nation, but also the world's biggest poultry producer. According to the Food and Agriculture Organization of the United Nations (FAO), China has one-fourth of the world's chicken, two-thirds of the world's domesticated ducks, and almost nine-tenths of the world's domesticated geese. The sheer size of China's human and poultry populations make the country a pivotal point in the global efforts to prevent and prepare for a possible human influenza pandemic.

According to the World Health Organization (WHO), as of February 13, 2006, China has reported the country's 12th laboratory confirmed case of human infection with the H5N1 avian influenza virus, eight of which have been fatal.² The most recent death was a 20-year-old female farmer from the county of Suining in the south-central province of Hunan. China announced its first confirmed human case of infection in mid-November last year, and since then sporadic human cases have occurred in seven provinces and regions—Anhui, Fujian, Guangxi, Jiangxi, Hunan, Liaoning, and Sichuan.³

China has recently experienced an intensified recurrence of highly pathogenic avian influenza (HPAI) in poultry. According to WHO, since May 2005 Chinese agricultural authorities have reported over 32 poultry outbreaks across the country, the majority of which were reported in October and November 2005. However, about one-third of China's reported human cases of avian flu occurred in areas where no recent poultry outbreaks have been officially reported.⁴ This has become a growing cause for concern. Some health experts suspect that environmental pollution by sick or dead birds might be to blame for such human cases.

STEPS TAKEN

China's health and agriculture authorities have become increasingly vigorous to contain HPAI among poultry and prevent its spread from birds to humans. The government has conducted large-scale poultry culling in known avian flu-infected regions. China has also launched tightened quarantine measures, extensive vaccination, and preventive measures against human infection. Meanwhile, Beijing has called for enhanced cooperation among all countries, between governments and international organizations, among governments, business and non-governmental organizations (NGOs) to curb the epidemic. Compared to the period of Severe Acute Respiratory Syndrome (SARS) outbreaks in 2003, Beijing this time has been praised for its efforts to control the avian flu. A senior WHO official for communicable diseases has recently commented that "the Chinese government has taken very effective measures, and they are making improvements every month, even every day."⁵ Another WHO regional director for the western Pacific said Beijing's response to avian flu so far had been "aggressive and thorough once the outbreak was recognized."⁶

DOMESTIC EFFORTS

China's central government leadership exhibits a strong political commitment to tackling the avian flu outbreaks. The Chinese Ministry of Health (MOH) launched the national contingency plan for preparedness against a possible outbreak of pandemic influenza in September 2005. MOH also urged all localities to draft their own contingency plans in accordance with local conditions and make good preparations for a possible flu pandemic. According to the plan, the MOH is held accountable for organizing and coordinating epidemic contingency work, health authorities above the county level should ensure the collection, registry and delivery of flu virus samples for testing, and the national Center for Disease Control and Prevention (CDC) should establish a national system to manage the surveillance information.⁷

More recently, the State Council published national response plans for nine types of emergencies, one of which is public health incidents. The emergency plans are

² WHO Avian influenza—situation in China—update 4, February 13, 2006, accessed at: <http://www.who.int/csr/don/2006-02-13a/en/index.html>.

³ WHO Avian influenza—situation in China—update 3, February 9, 2006, accessed at: <http://www.who.int/csr/don/2006-02-09/en/index.html>.

⁴ Xinhua, "PRC officials blame environmental pollution for human cases of bird flu," February 10, 2006.

⁵ Xinhua, "WHO praises China's efforts in controlling avian influenza," February 4, 2006, accessed at: <http://www.china.org.cn/english/2006/Feb/156852.htm>.

⁶ South China Morning Post, "Optimism surrounds bird flu conference," January 18, 2006.

⁷ People's Daily, "China launches contingency plan for possible pandemic flu," September 29, 2005, accessed at: <http://english.people.com.cn/200509/29/eng20050929-211570.html>.

believed to be the first comprehensive and detailed crisis management plans in China. The new plans, which were released in January this year, listed preparedness, coordination of related parties and information transparency among the key elements of emergency management.⁸ With new and strengthened emergency planning, China is demonstrating a greater awareness of the need for a prompt and effective response to such crises as the SARS epidemic in 2003 and potential future avian flu outbreaks.

Changes in official structures have been an encouraging part of the government's anti-flu efforts. The MOH has set up a special department to deal with avian flu. The Ministry has also established 192 monitoring spots throughout the country for flu outbreaks. Following the State Council's emergency response plans, the MOH announced the formation of a national expert team in response to emergent public health incidents, consisting of 105 experts in the field including communicable diseases, poisoning treatment and early warning networks.⁹ In early November 2005, the central government set up a general directorial office for avian flu prevention, bringing together six agencies in charge of food security, animal health and prevention science under a unified system, in order to coordinate the internal bureaucratic response.¹⁰

INTERNATIONAL COOPERATION

Beijing has demonstrated greater openness and commitment on the international front as well. On January 17 and 18, 2006, the international pledging conference on avian and human influenza was co-hosted in Beijing by the Chinese government, the European Commission and the World Bank. The meeting of the delegates from more than 100 countries, regions and international organizations has led to USD 1.9 billion to fight avian flu worldwide, a higher figure than expected.¹¹ Chinese Premier Wen Jiabao pledged that China would donate USD 10 million to help the global fight against the avian flu.¹²

The conference endorsed the "Beijing Declaration," which promised to enhance sharing of information and relevant biological materials, increase cooperation on global research and development of safe and effective animal and human vaccines and antiviral medicines for humans, and to periodically evaluate the impact of national pandemic influenza preparedness and action plans.¹³ This meeting was another positive example of China's effort to become a more responsible global player on international health issues.

Beijing has also worked with the United States to bolster avian flu prevention. On October 31, 2005, Chinese Health Minister Gao Qiang visited Washington and signed with U.S. Health and Human Services (HHS) Secretary Michael Leavitt a Memorandum of Understanding (MOU) on collaboration on emerging and reemerging infectious diseases between the United States and China. As an important step for further cooperation, the MOU set up the mechanism for a biennial health ministerial meeting, and aimed to strengthen bilateral collaboration on emerging infectious disease including avian flu, HIV/AIDS, and West Nile virus. In particular, the United States pledged to help enhance the capacity of Chinese public health laboratories, train biomedical research, prevention and control personnel, conduct emerging infectious disease surveillance, and cooperate on research and development of vaccines and drugs.

⁸ China Daily, "Emergency planning to help crisis response," January 24, 2006.

⁹ Xinhua, "PRC health ministry sets up team of experts to deal with disease outbreaks," January 23, 2006.

¹⁰ Beijing Review, "Threat Management," December 15, 2005, Vol. 48, No. 50.

¹¹ BBC, "\$1.9 billion pledged for bird flu fight," January 18, 2006, accessed at: <http://news.bbc.co.uk/1/hi/world/asia-pacific/4622982.stm>.

¹² Xinhua, "Wen Jiabao says PRC to donate \$10 million to support avian flu prevention," January 18, 2006.

¹³ FAO, Beijing Declaration at the International Pledging Conference on Avian and Human Pandemic Influenza, January 17–18 2006, Beijing, accessed at: <http://www.fao.org/ag/againfo/subjects/documents/ai/beijingdeclaration.pdf>.

REMAINING CHALLENGES

During the SARS outbreak two years ago, China encountered intense criticism from the international community for its delayed response and cover-up at the initial stages of the epidemic. Facing a potential influenza pandemic, the Chinese government has made noticeable progress in terms of transparency of information and international cooperation. However, there are still a range of lingering problems, particularly at the local level, which may limit the success of Beijing's efforts to bring the disease under control.

Transparency

The growing political determination within the central leadership needs to be translated into local action. Fearful of censure, Chinese provincial and county officials sometimes might choose to conceal infection cases from the central government. This was at least the case during the early stages of the SARS outbreak. Additionally, to some predominantly poor Chinese farmers, economic damage brought by anti HPAI-measures is often a more pressing concern than potential health risks, giving them an incentive to hide an outbreak. Transparency and accountability mechanisms need to be introduced and strengthened to avoid potential underreporting at all levels. Involving community groups in disease monitoring and reporting can be an effective approach to enhance transparency.

Technical Capacity and Financial Resources

Lack of capacity and resources at local levels remains a large question mark in China's handling of avian flu. Health Minister Gao Qiang identified his largest concern in a press conference in November 2005 as "the inability of our medical and quarantine personnel at the local level to diagnose and discover epidemics in a timely fashion due to lack of skills and relatively backward equipment."¹⁴ The country still faces a shortage of experienced and qualified professionals, resulting in misdiagnosed patients as having pneumonia instead of avian flu. There is also a great need for qualified and experienced veterinarians. Meanwhile, many villages and towns do not have effective surveillance systems, leading to delayed reporting of outbreaks. Only after patients admitted into hospitals are identified as having the H5N1 virus do local officials begin investigations in patients' villages.

The reality is that much of the country's poultry is raised in backyard farms in close proximity to humans in rural China, where 70 percent of the nation's population lives. Close contacts between people and birds are so frequent that the risk of human infection is high. However, according to a report released by the Development Research Center of the State Council, a think-tank directly under the cabinet, 90 percent of China's rural population is not covered by any form of medical insurance. The same report also notes that "China's medical reform has been unsuccessful because it has become unbearably expensive to patients and many dare not go to hospital when they fall ill."¹⁵ Lack of medical insurance, together with ill-equipped countryside clinics and hospitals, makes rural China an extremely vulnerable spot in the face of infectious disease outbreaks.

China's animal epidemic prevention statute requires that local authorities cull all domesticated birds within a 3-kilometer, or 1.8 mile, radius and vaccinate the remaining birds in a 5-kilometer radius vicinity. To date, over 24 million birds have been culled.¹⁶ Farmers face a significant loss in business and livelihood without appropriate compensation or reimbursement, which represents a substantial financial commitment for local governments. As a matter of fact, the Ministry of Finance and the Ministry of Agriculture jointly issued a regulation that compensation for each bird destroyed for avian flu prevention would be approximately RMB 10 (about USD 1.25), with local governments allowed to set the exact standard in accordance with local conditions.¹⁷ Even at that seemingly low cost, the mass culling of birds would surely strain local governments' finances.

Public Awareness

As a result of poor education conditions and lack of available resources, public awareness and knowledge of a possible pandemic is limited in many parts of China, especially in rural areas. This adds a great barrier to overcome in terms of avian flu education and prevention. Basic information about the symptoms, how it is con-

¹⁴ Beijing Review, "Threat Management," December 15, 2005, Vol. 48, No. 50.

¹⁵ Beijing Review, "The Medical Reform Controversy," September 22, 2005, Vol. 48, No. 38.

¹⁶ WHO Avian influenza—situation in China—update 2, January 25, 2006, accessed at: <http://www.who.int/csr/don/2006-01-25a/en/index.html>.

¹⁷ Caijing Magazine, "Flu outbreaks challenge grassroots epidemic prevention system," November 14, 2005, Issue 146.

tracted, and where the breeding grounds for H5N1 virus are and other general information should be distributed to the public, particularly the rural population, in order to instill preventative measures to combat this deadly virus. As the “Beijing Declaration” called for mobilization of all social sectors including nongovernmental civil society to effect a coordinated response,¹⁸ community-based grassroots NGOs should be encouraged to partner with the government to promote public education and enhance public awareness, in particular in hard-to-reach populations and areas. China’s HIV/AIDS NGOs have tentatively begun to assist the government to reach out to socially marginalized groups and provide training, care and support. The role of NGOs in the fight against avian flu should be expanded as well.



¹⁸FAO, Beijing Declaration at the International Pledging Conference on Avian and Human Pandemic Influenza, January 17–18 2006, Beijing, accessed at: <http://www.fao.org/ag/againfo/subjects/documents/ai/beijingdeclaration.pdf>.