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Dr. David Nabarro
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Influenza Pandemic Preparedness: A Status Report

Dawn Calabia:

Our next speaker is going to be Dr. David Nabarro, who has become the voice for the prevention and containment of avian flu and human flu around the world. Dr. Nabarro is a distinguished physician. He was with the World Health Organization for many years working on prevention and treatment of malaria and other tropical diseases. The World Health Organization kindly lent him to the Secretary-General to deal with the very serious challenges that the world is facing on avian flu. Thank you, Dr. Nabarro for joining us today.

Dr. Nabarro:

First of all, really I'm so grateful to you for giving me the chance to be with you all today. What I'd like to do is to describe to you the work in which I'm involved, but not just as a talk about a person's job, but instead to help you to see some of the really exciting elements of this work that perhaps have implications for other international challenges and also that show how the United Nations as a system can participate with other international, regional and national entities to address a complicated issue. And so as I present I shall try to leave little

tempting morsels for you to feast on in the moments we'll have afterwards for discussion.

But a bit about myself. I started out, as a young doctor, working in villages firstly in north Iraq, in Kurdistan in 1974 and then in eastern Nepal between 1976 and 1979, and then professionally was a teacher in various universities as well as being a researcher. And then in 1990 I decided to try and get into policy work, so I joined the British Foreign Office, initially in something that was called the Overseas Development Administration. And then later when the present government took office it became the Department for International Development. And over time I took responsibility for a number of portfolios, particularly international health, international education support, conflict, gender and other issues.

And then when Gro Harlem Brundtland became director general of the WHO in 1999, I applied to work with her on a number of issues to do with changing the face of the World Health Organization, she being an extraordinary political leader. I was delighted then, during my time there, to become her chief of staff and worked in that role for two years.

And then I got given this new responsibility for working on coordination around avian influenza and human pandemic readiness, as you kindly said, just in 2005. One of my colleagues, Elham Seyedsayamdost is sitting here on the right-hand side of the room.

I've got ten short areas on which I'd like to land during this introduction. I'd like to talk initially about avian influenza. What actually we're dealing with here is a viral disease that affects birds, all kinds of birds but particularly poultry. There are many kinds of avian influenza, and if we were to look at any bird that we saw and were able to get a viral profile on that bird, we'd find that it's probably carrying a number of perfectly harmless, what we call low pathogenic influenza viruses. But occasionally birds get affected by what are called highly pathogenic influenza viruses, which tend to kill them and kill them in very large number.

And the present highly pathogenic virus that we're particularly concerned about, which is called H5N1 has been affecting bird populations in varying amounts since the late 1990s but particularly started to cause trouble in 2003, leading to major deaths among poultry, among waterfowl and among a number of wild birds building up in 2005, 2006 and now 2007.

This virus not only was affecting Asian birds, but particularly in 2006 moved into 50 countries throughout the world, affecting commercial poultry operations, affecting waterfowl in reserves and also sometimes affecting exotic birds and birds in zoos to the point where now 250 million birds have died as a result of this and many more have been killed to try to prevent the spread.

Why on earth should we be worried about a bird disease? Surely this is primarily a problem for people who make their living out of farming chickens. The answer is that this virus has some unpleasant characteristics. It's capable of affecting humans. Fortunately it's only affected a few hundred humans, but it's quite clear from the virological work that's being done by people here in the United States and Europe and Japan and India and China that this virus could, with a relatively small number of changes in the base pairs in its genetic material, it could develop the capacity to infect a lot more humans and more importantly to be transmittable from human to human. This virus is evolving at a very rapid rate, and we don't know when that kind of transformation might occur, but we do know that we could well be having another influenza pandemic any time now. We do know that if this virus does undergo the mutation I've described it will become the cause of the next influenza pandemic, and we do know that if it's this virus that causes the influenza pandemic we could be facing a pandemic at least as serious as the pandemic that affected the world in 1918.

I have to be a little careful on numbers and a little careful on predictions. I usually base

my predictions on the work done by the World Health Organization and others. But the pandemic threat itself is a real one. The pandemic threat due to this avian influenza virus is a very strong probability. And it's for that reason that governments throughout the world but particularly in Asia have discussed amongst themselves with the Secretary-General of the United Nations and others, particularly in 2005 when things were building up, saying we need to get more organized in dealing with this threat. So in 2005 the UN systems organizations, the World Bank and governments, got together and agreed on a strategy for trying to contain bird flu and reduce the potential impact of the pandemic.

The strategy has five elements to it. The first is to really modify the conditions under which poultry are reared. You probably don't know, and I wouldn't have known before I got into this, that the world's poultry production has doubled over the last ten years. As our world gets wealthier, so it wants to eat more and more meat, and the cheapest meat to produce is meat from poultry. And so poultry production, particularly in developing countries, has increased, which has meant quite a lot of poultry production systems and plants that are not very hygienic.

The result is that the conditions under which poultry are being reared in many countries are unsatisfactory and this makes them susceptible to getting disease. And it's not just poultry that are reared in conditions where disease can come up. As you know from a number of recent scares, the conditions under which beef, under which sheep, under which pigs are being reared can also create the climate within which pathogens or germs that could then affect humans, that make the conditions more likely for these germs to appear.

So strategy part one is do something about the really unsatisfactory conditions in which livestock are being reared. Strategy part two is make sure that when a new disease does appear that it doesn't surprise us, it doesn't shock us, it doesn't do what SARS did for us, it actually is

one that we can deal with quickly through efficient human health services.

So the human health side, you know, 70 percent of new infections that are going to affect the human race will come from the animal kingdom. We need to be on guard for pathogens that come into the human race, and this means that we've got to build up our defenses against disease that comes in to the human system as though we're building defenses against any other threat to humanity, whether it's due to bombs or whether it's due to contamination with nuclear material or contamination with chemical material. I'm afraid disease agents are at least as serious as those and we have to build up strong health defenses.

The third thing we need to do is to mobilize society to change the way in which it's rearing animals, to change the way in which it's approaching human health risks so that people understand this is a serious issue. And of course one can become a little bit tiresome when bringing up an issue like this, but it's one that we're dealing with. And we're finding particularly in industrialized countries, but also in many poor countries, that people are intuitively recognizing that shoving a load of animals into a small space, building them up as quickly as possible so that they produce meat and then killing them quickly and selling that meat through all sorts of modern techniques is itself likely to create conditions where new pathogens will appear. And so people are realizing that some kind of change is necessary, whether it's in small scale operations and large ones as well.

The fourth thing we have to do is to be ready for the pandemic when it comes. We had SARS in 2003. Due to fantastic health work it didn't kill more than 1,000 people. It was really quite a well contained issue. But it caused $50 billion worth of economic damage and a lot of social disruption. The pandemic, according to the World Bank, will cause a lot more damage. We need to be ready to keep the world going a lot better than we keep it going with other major

threats when the pandemic comes.

And lastly we need to have in our strategy of systems financing and coordinating external support. Those of you who study international assistance know that one of the big challenges, even when you've got money, is to coordinate people and say that we do it right. And you will have seen that with HIV. You will have seen it with issues around climate and environmental issues. And we've got it as well on bird flu. But this time we said let's get these issues into the strategy right from the start, let's build a system that, from the start, gets it right.

We also did some analysis, point four, on what actually matters at the country level to deal with a problem like this. What do you need to have in place? Number one, a strong political commitment; number two, government systems that can work well and respond to the challenges when they appear; number three, different parts of government, be they agriculture or health or police and interior, working together efficiently and effectively so that they actually do deal with the problem properly. Number four, compensation systems so that when farmers have their chickens killed that they actually get a fair price paid to them. Otherwise they'll hide disease, they'll hide their chickens, as we have seen in many countries, and we will end up with a problem compounding itself. Next one, number five, communications systems so that everybody knows what they've got to do, that people are fully informed and involved. We saw in SARS and in other conditions, if you hide information things don't get done. And six, the last success factor for implementation is the absolute need to engage the private sector, to engage the voluntary sector, so that everybody works together.

We've analyzed countries throughout the world on how they're responding to bird flu using these six success factors. We've categorized and judged how they're getting on and we now are working with governments to try to make sure that those six factors, which actually

would be the same success factors for any major international problem that involves particularly the health sector, that we try to monitor to make sure that these are things we can face.

What are our current challenges? Well, the obvious one really, this issue has had a lot of publicity. It's quite scary. It's had docu-dramas on your own television here in the U.S. It's been covered quite heavily in the media. And there is always a point where people say, "are these people telling us the truth or are they just crying wolf in order to try to get money for their research programs or get themselves more visibility?" Well, I can just tell you that the governments with whom we're working in rich countries and in poor countries are saying this is one issue that we have to keep focus on even when it's not in the media, even when it's perhaps being pooh-poohed by skeptics. And so the challenge of making sure that the attention is maintained is there, but it's not frankly my most serious challenge. My second challenge is to make sure that people pay adequate attention to animal health. It's not a popular subject. And there are a lot of people who are involved in livestock rearing who frankly are involved in very shady practices with regard to the disguised trade or naughty things with meat, and we need to get this properly put in place. My third challenge it to keep all of the folk who are engaged in this work properly in line with each other and that is what Elham and myself are involved in.

My next point is to really go further into this issue of healthy livestock rearing and human health security. I can’t go on about this enough. We have one world and the important thing about diseases in our world is that they don’t respect frontiers of national boundaries. They are incredibly capable of moving across water or moving across land barriers, and with air travel as fast as it is and people smuggling animals and also humans being sick, we have to recognize the interdependence of the world when it comes to disease.

Essentially we have one life. I know that you can say, "that's all very well, but we're

billions of people." But actually when an infectious disease comes along it doesn't matter whether you're rich or poor, it doesn't matter whether you're man or woman or child. You are still susceptible to that disease. And unfortunately what we're seeing when it comes to animal diseases affecting humans, it's women and children who tend to be most at risk because in our world women and children are most involved in the management of livestock, particularly small livestock.

We have one health. Basically you either have health or you don't have health. Of course you can recover from disease, but once you are seriously disabled or die, that's it. And we have a legacy. Actions we do now in relation to health will affect generations to come, particularly when it comes to the rearing of livestock. So this is an issue which is not only important for now. It's important for the future, quite like many of the other issues that you may have been discussing here.

We're involved in a number of processes. Within the United Nations we have a fantastic selection of agencies and organizations. And what we're trying to do at all times is to use science to assess risks of disease and outbreaks just as we do with assessing risks in other areas. And we have the capacity within our world and our international system to be ready to respond.

You had John Holmes here this morning. One of my previous jobs was working in disaster response. We're using the same rationale in responding to the crisis of avian influenza and a potential pandemic, assessing risk, being ready and responding, domestically, internationally. And you know, as soon as an issue moves from the domestic arena to the international arena, as soon as an issue involves countries working in synergy, we get the foreign ministers and their staff involved and one of the excitements of this issue is that although it seems to belong in the silo of a livestock department, in an agriculture ministry or

the silo of a ministry of health, this is one that has been engaging foreign ministers in a quite intense way, just like HIV/AIDS, during the last couple of years. And it's given us a lot of new energy and new excitement with which to move.

We have a number of key functions that have to be done internationally, making sure that everybody agrees on strategy, making sure that we've got the investments so that countries can build up their livestock services and their health services, making sure that actions are implemented properly and on time, and then tracking that implementation in a painstaking way.

One of the functions within the UN, one of my functions, is to track progress on what's happening in avian and human influenza. I brought some copies of our current progress report, which not only tracks what's being done but in rather a painstaking way tabulates the monies that are being given by different countries for this issue, shows where the money is being spent. And we have the beginnings of an ongoing not financial audit but program audit of what is being done with the money, what results are being obtained and can we show progress from one year to the next, because if we're going to get the kind of synergy of action that we're after and the results that we want and if we're going to keep money flowing, it's that capacity to link together strategy and results that's really important.

And then lastly we have a lot of different institutions involved. We have governments. We have different parts of the UN, the funds and the programs in our family. We have development banks, private entities and NGOs. And on this issue we've probably got the best fully functioning movement of actors that I have ever seen in the United Nations system working effectively together.

And I suppose what I wanted to leave with you was this as an example of where a global issue that involves those involved in foreign policy in a very intensive way, that brings together

the different parts of the international system in a reasonably well functioning network, and that is achieving results that can be put out quite widely. We're preparing for the unthinkable catastrophe of a really bad pandemic. We can't be sure that we're fully prepared. We're doing quite a good job.

This is the UN, not so much financial and management reform, it's programmatic reform in action. Could we perhaps be applying similar approaches elsewhere? And it's really up to the members of the United Nations, the governments, to do the same on other issues as they have managed to do on this one.

Thank you very much indeed. (Applause.)

Maxine Isaacs:

Dr. Nabarro, there's a story in the paper this week about an Ebola-type virus that's in the U.S. Great Lakes on the Canadian border. Is this something that's on your radar screen? Does it have implications for your work?

Dr. Nabarro:

Thank you very much indeed. All of these zoonotic diseases, which are being found in animal populations and have the potential capacity to jump into the human race are within the purview that my team is looking at. We have concentrated primarily on avian influenza, with particularly bringing in the World Health Organization, Food and Agricultural Organization around this issue.

But this leads us into the much wider concern of links between diseases in wild animals and domestic animals, and Ebola tends to be in wild animals, and in the human population. I've

got nothing to say rather than the issue that you're describing is one that the Centers for Disease Prevention and Control here in the United States is watching fairly closely along with a number of other similar scary issues. And I think at the moment we're not excessively concerned about it. But the radar is going like that all the time because one of the major threats to human security is viruses coming in from animals.

Question:

Meera Doraiswamy from Booz Allen Hamilton. In 2004, Barbara Stillwell, a World Health Organization employee, authored a report on the shortage of healthcare workers. And I just wanted to know whether your team had addressed this as an issue when dealing with pandemic preparedness and response.

Dr. Nabarro:

I just want to give a little special thank you to Booz Allen Hamilton, who have been one of our major private sector pro bono partners in this work and have been involved with us very closely along with several others in producing simulations that enable governments and communities to themselves play out over a number of hours what a pandemic would do for their livelihoods and their lives. That has been particularly important.

And one of the lessons from the simulations that we've been doing with you is that weak health system is a really big liability, especially as during a pandemic you'll get 30 percent plus absenteeism, so you'll have even fewer health workers. It's not just the health sector where it's a problem, it's also in a corrections sector. It's also in a number of other essential services sectors.

But let's hone down on health. If people accept our assertion, the assertion that comes

from Margaret Chan, the Director-General of the World Health Organization, and the assertion that comes from her team that one of the major threats to human survival and well being is going to be not only a potential pandemic but outbreaks of disease in the short- to medium- to long-term future. The one absolute requirement for the future health of humanity and health security is going to be properly trained, skilled, equipped and paid health professionals.

Barbara Stillwell's work, which has led on to a major emphasis in the World Health Organization on the human health workforce, shows that unless we start finding ways to reward health personnel better, particularly those who are working in public health as opposed to curing individual healthcare on which quite a lot of money can be made, but people who work in public health have got to be properly recompensed, otherwise that part of our defense system is going to be weak. And we've got too many examples, particularly in very poor countries of where that weak defense system gets broached and we end up with outbreaks of cholera or shigella or other unpleasant diseases that have major human, economic and social consequences.

We are fussing about this big time, and we unfortunately, none of us as individual professionals, have a simple answer to it because the real lesson is going to be that we have to find ways of recompensing health professionals so that they are remunerated at an international parity because, as you know, it's very easy if you're a trained public health doctor from Botswana or Zimbabwe or Mozambique or Kenya or wherever, especially if you happen to have an internationally transferable language, to go and shift to a country where you can be paid ten to 100 times as much as you're paid in your own country. Big issue, needs concerted attention.

Question:

How do we know the number of deaths due to bird flu has been accurately reported?

Dr. Nabarro:

Just because the area you're just talking about is a really, really hot issue at the moment in foreign policy terms, and also there's some big tricky things. And I also know that we don't have much time. Do we know that the deaths are accurately reported? We do not know.

One of the big challenges in this work has been to try to find incentives to enable countries and more importantly communities within countries, to be truthful about reporting, particularly on the animal illness. I think we probably get better information on the human cases than we do on the animal illnesses. There are all sorts of negative incentives that lead people to conceal animal sickness even within countries, and we're finding this a lot in China.

I suspect that there may well have been many more cases of humans who have been exposed to and possibly sick as a result of H5N1 than the 280-odd that are reported to the WHO. To get into the WHO list you have to be confirmed through a number of different tests, and quite often people get sick, die, get buried or cremated before we can get specimens from them. And so the actual number of cases that die -- well, of the cases we know of we have a pretty clear idea of what's happened to them. The big question is are there 1,000-odd or several thousand unreported.

The general feeling we have is that this virus is not that serious for humans and that it may well be from serological studies of people who are close to infected chickens that actually we haven't got as great an under-reporting as some have suspected in the past. But you only have to go onto some of the blogs to see just how much suspicion there is about this. And I do feel that there are still countries that are hiding this information. There's no automatic international Interpol police system that will go and find out. We just have to rely on them

finding it pretty difficult to hide things. So thanks for bringing it up. This is kind of high up on my worry list.

Question:

How do you prepare for a pandemic when you don't know what the virus will look like because of the way it mutates? And how much after the pandemic hits do you think that you can have a vaccine for it due to the fact that you don't know what it will look like to begin with? Have you looked at like public-private partnerships for the development of a vaccine so that you can create it in a timely way?

Dr. Nabarro:

Now preparing for a pandemic. When the pandemic strikes there will be three kinds of defense that we have. Number one is standard hygiene-type behavior that will reduce the risk of being infected, which will mean things like washing hands, maintaining a distance from other people, hunkering down in our homes -- Mike Leavitt in the U.S. is very clear on this -- with a supply of food and other requirements to keep ourselves pretty well isolated until the worst of the pandemic passes, usage of masks and other forms of protective material. This will be the base way in which we will reduce infections. Studies of the 1918 pandemic show that when those kinds of hygiene precautions, and in particular reducing mass gatherings, when these are adopted you greatly reduce the risk of people getting sick and dying.

Number two is the use of antiviral medicines. There's one called oseltamivir or Tamiflu, which seems to reduce the symptoms of many viral diseases. It's quite useful. There are stockpiles of oseltamivir being built up by many governments, including the U.S. These are

going to be very important in the initial containment.

Number three, a vaccine. Now at the moment, we are getting vaccines against H5N1, but we don't know H5N1 will be the cause of a pandemic. So what we really need is to have vaccines against the pandemic virus when it appears. It will be six months after the appearance of the virus before we have probably around 700 million to a billion doses. There are going to be big questions about how that vaccine is going to be distributed. There's a current international debate going on about how to ensure that poor countries can access it. You can find details of that. If you google on vaccine access and Indonesia you'll get lots of information about that and I'm sure you're doing that.

It's a very, very interesting important topical subject, which shows the importance of us recognizing this is not just a local issue. It's not just a national issue. It's a global issue. It needs a global response, and only the UN, frankly, has the credentials to lead that response.

Ms. Calabia:

Well, this has been an extraordinary session and we've been stimulated, informed, and scared, I think, which is always good when you have to prepare yourself for the stage of our lives and our political action. You understand the importance of having a powerful communicator in a position like this and a committed internationalist. It's a great pleasure to meet you, Dr. Nabarro. I want to thank you all for your attention and for the great questions and for your willingness to just make questions. Thank you very much. (Applause.)

Dr. Nabarro:

Thank you. I'm privileged to be here. Thank you. (Applause.)