

**COCA Conference Call
Pandemic Flu Preparedness
Nicole Smith, PhD, MPH, MPP
August 8, 2006**

Diana Hadzibegovic: Good afternoon from the CDC Clinician Communication Team.

I'm pleased to announce today's conference call on Pandemic Flu Preparedness. Today's speaker is Dr. Nicole Smith.

Dr. Nicole Smith joined the Centers for Disease Control and Prevention as a research assistant on a CDC project promoting doses of hepatitis B, and later she became an Associate of Schools of Public Health Fellow in Hepatitis Branch at the National Center for Infectious Diseases.

She became an Epidemic Intelligence Service Officer with the Health Studies Branch in the National Center of Environmental Health in 2001. Following EIS, Nicole returned to the National Immunization Program where she was the Associate Director for Policy in the Immunization Services Division. In November 2005, Nicole joined the NCID/Influenza Branch where she is working on domestic pandemic preparedness efforts while also assisting the Advisory Committee on Immunization Practices regarding the prevention and control of influenza.

Slides for today's presentation, you can find on www.bt.cdc.gov/coca and you can find slides for today's conference call. Let me just remind you that if you have any questions and you don't have a chance to ask after today's presentation, please email to coca@cdc.gov.

I'm pleased to announce and introduce Dr. Nicole Smith. Dr. Smith, you may start.

Nicole Smith: Thank you. Good afternoon.

Today, we'll be presenting an overview of Pandemic Influenza Planning at the federal level including some of the key assumptions guiding our planning efforts. I will also discuss our objectives for domestic surveillance in preparing for and responding to a pandemic.

So that there are no false expectations for this afternoon's session, I'd like to note that I'm not planning to discuss the current avian influenza situation in birds or humans. Avian influenza was recently discussed during a call on June 22nd. A summary and the slides for that presentation are available on the Web.

In addition, I will not be providing information regarding clinical guidelines such as the use of antivirals or vaccines, or infection control practices including the use of masks by healthcare workers or the public. These topics will be covered during future calls.

To make sure that we all have a common understanding regarding the differences between seasonal, avian, and pandemic influenza viruses, let me remind you that seasonal influenza viruses are an ongoing public health problem.

They circulate throughout the human population and spread easily from one person to another. In contrast, despite their devastating effects on domestic poultry, avian influenza viruses rarely infect humans. Nevertheless, when human infections with H5N1 do occur, they can cause severe illness. Although there have been some cases of human-to-human transmission of H5N1, we've not seen the viruses spread easily between people.

Pandemic influenza viruses appear periodically, perhaps every 10 to 50 years and can begin anywhere in the world. H5N1 is considered a likely candidate for the next pandemic because it is so ubiquitous in parts of Asia. H5N1 meets two of the three criteria associated with a pandemic virus. One, it is a new influenza A virus that has emerged in the human population, and two, the virus does cause serious illness in humans. However, the third condition, the establishment of efficient and sustained human-to-human transmission of the virus, has not occurred.

Before moving on to the next slide, I'd like to remind you that despite our interest in H5N1, there are other avian influenza viruses besides H5N1 circulating globally that could evolve into a strain that could cause a pandemic.

During my presentation today and in the future, I hope you'll keep in mind that there is an interrelationship between seasonal influenza and pandemic influenza preparedness. Actions we take now to address seasonal influenza will help with pandemic influenza preparedness and vice versa.

Why is there so much concern about a pandemic?

To begin with, although seasonal influenza is a serious disease that causes many illnesses and deaths each year, an influenza pandemic can have both immediate and long-term consequences to people in the US and around the world. Because of how rapidly a pandemic spreads, we expect to have shortages of vaccines and antiviral drugs and that our healthcare systems will be overwhelmed.

We already know that seasonal influenza outbreaks place a burden on hospitals and providers. The challenges of addressing the need for surge capacity during a pandemic will be incredibly difficult, to say the least.

In the event of a pandemic, everyday life could be disrupted, as people in multiple communities everywhere are likely to fall ill at the same time. Unlike emergencies that affect buildings or technology or are limited to specific geographic regions, a pandemic would affect people directly, resulting in disruptions that could include everything from school and business closings to interruptions of basic services such as public transportation.

Although the public health system is actively preparing for this global emergency, the nature of an influenza pandemic requires that all individuals and organizations take action to limit a pandemic's negative effect on people, the economy, and society.

In addition, state, local, and tribal governments, businesses, schools, colleges and universities, faith-based and community groups, and healthcare organizations can, and should, prepare now.

To help the US and other countries prepare for a pandemic, the federal government is taking an important leadership role through the development and implementation of the national strategy for pandemic influenza which was released by the President on November 2, 2005.

The following day, the HHS Pandemic Influenza Plan was published. It outlines key roles of the Department of Health and Human Services and its agencies in a pandemic and provides planning assumptions for the federal, state and local health levels. It also contains guidance to state and local health departments in eleven key areas - surveillance, diagnostics, infection control, vaccine and antiviral distribution and use, disease control and prevention, managing travel-related risk of disease transmission, public health communications, and workforce support.

While the national strategy and the HHS Plan were well received there was continued concern that they lacked a certain level of specificity and that an implementation or operational plan was needed.

Following the Hurricane Katrina and Rita experiences, it became increasingly apparent that an integrated government-wide plan was needed that reflected the roles and responsibilities of all the federal agencies not just the Department of Health and Human Services.

Therefore, in early May of this year, the Homeland Security Council or HSC, released the implementation plan for the national strategy for pandemic

influenza. This plan identifies specific coordinated steps the federal departments and agencies should take to achieve the goals of the national strategy and outlines expectations for federal and nonfederal stakeholders in the US and abroad.

As a compliment to the HSC implementation plan, HHS staff have been developing the HHS operational plan which will detail specific action steps, responsible parties, timelines, and measures of performance.

It will also include detailed continuity of operations plans that ensure that the essential functions of each HHS operating division are identified and maintained in the presence of the expected decreased staffing levels of a pandemic event.

The national strategy has three goals. One, stopping, slowing, or limiting the introduction of a pandemic virus to the US, assuming the pandemic doesn't start in the US. Two, limiting the spread of the virus within the US reducing the burden of disease, and three, sustaining the infrastructure and mitigating the impact of the pandemic on the economy as well as helping to ensure our society continues to function.

The national strategy serves as the framework for our planning efforts in the US and is supported by three pillars.

Pillar one reflects activities that should be undertaken before a pandemic. In planning for a pandemic, as I mentioned, the federal agencies are developing their own implementation plans. In addition, we are working through multilateral organizations to support the development of pandemic plans in other countries.

We are also working with states and localities to improve preparedness at all levels and building on existing mechanisms to recruit and prepare for the deployment of health, medical, and veterinary providers within and across jurisdictions.

To communicate expectations, roles, and responsibilities to all levels of government, the private sector, and individuals, we are working to ensure there are mechanisms to provide clear, effective, and coordinated risk communication domestically and internationally before and during a pandemic.

We are preparing guidance to the private sector and critical infrastructure regarding their response roles and guidance to individuals regarding infection control behaviors to adopt pre-pandemic, especially during a severe influenza season.

We are also developing guidance and support to poultry, swine, and related industries regarding their role in responding to an outbreak of avian influenza and ensuring the protection of workers and providing public education campaigns on how to minimize the risk of infection from animal products.

Prior to the onset of a pandemic, we are encouraging nations to develop their own production capacity and stockpiles, and supporting the establishment of regional resources.

We are also encouraging and subsidizing state-based stockpiles of antivirals. In addition, we are establishing and/or enhancing the domestic production capacity and stockpiles for vaccines, antivirals, and medical material.

We are establishing distribution plans for vaccines and antivirals including the development and revision of prioritization schemes. We are also advancing our scientific knowledge about influenza as well as promoting research and development of vaccines, antivirals, adjuvants, and diagnostics.

Pillar two involves establishing a surveillance and detection system that will inform the activation of response plans before a pandemic virus is introduced in the US; the initiation of additional surveillance systems; and, the initiation of vaccine production and administration (once vaccine doses become available).

To ensure the rapid reporting of outbreaks, we're working through international partnership on avian and pandemic influenza to ensure transparency and scientific cooperation.

We are also supporting the development of enhanced scientific and epidemiologic expertise in affected regions, and we are enhancing laboratory capacity to provide rapid confirmation in the US and overseas.

We are advancing mechanisms for real-time clinical surveillance in emergency departments, intensive care units, and laboratories. We are developing and deploying rapid diagnostics with greater sensitivity and expanding domestic livestock and wildlife surveillance activities to ensure early warning of potential outbreaks.

To limit the spread of a pandemic strain, or strain with pandemic potential, we're strengthening systems to rapidly share information on travelers who may be infected or exposed, developing and exercising mechanisms to provide active and passive surveillance during an outbreak, expanding and enhancing mechanisms for screening and monitoring animals susceptible to viruses with pandemic potential, and developing screening and monitoring

mechanisms and agreements to control travel and shipping of potentially infected products to and from affected regions.

Pillar three encompasses the efforts associated with responding to and containing a pandemic. To contain outbreaks, we would encourage all levels of government, domestically and internationally, to take appropriate and lawful action to contain an outbreak within their border. We would use governmental authorities to limit nonessential movement into and out of areas where an outbreak occurs. We would provide guidance to all levels of government on the range of options for infection control and containment including non-pharmaceutical public health interventions.

We would also emphasize the roles and responsibilities of the individual because addressing a pandemic is not something federal, state, local government agencies can handle without the participation of the private sector and the public.

In a pandemic, we know there would be a need to leverage national medical and public health surge capacity. For example, we would need to implement state and local surge plans and leverage all federal facilities, personnel, and response capabilities including addressing barriers to the flow of personnel across state and local jurisdictions to meet local shortfalls and determining the spectrum of surge capacity activities that the military and other government entities may be able to support.

We would also need to activate plans to distribute medical countermeasures from the strategic national stockpile and other distribution centers. To sustain the infrastructure, essential services and the economy, we are encouraging the development of coordination mechanisms across industries and would provide guidance to activate contingency plans to ensure workers are protected while ensuring the delivery of essential goods and services and that sectors remain functional, despite significant and sustained worker absenteeism.

We know that effective risk communication will be essential during a pandemic. Therefore, we are preparing to ensure the delivery of timely, clear, and coordinated messages by trained spokespersons at all levels of government.

We are also working with state and local governments to develop guidelines to assure the public of the safety of the food supply and mitigate the risk of exposure from infected wildlife.

Our planning efforts are based on WHO phases and US stages that are linked to the characteristics of a new influenza virus and its spread throughout the population. Specific objectives exist for each stage. The stage 0 objectives

corresponding to the WHO or World Health Organization Phases I, II, or III are to track animal outbreaks until control or resolution, to provide coordination mechanisms, logistical support and technical guidance and to monitor for reoccurrence of disease.

During Stage 1, our objectives are to rapidly investigate and confirm or refute reports of human-to-human transmission, and to initiate coordination mechanisms, and logistical support that would be necessary if an outbreak is confirmed.

Specific objectives for Stage 2 would include containing the outbreak to the affected region or regions and limiting the potential for spread to the US and activating the domestic public health and medical response.

During Stage 3, we would work to delay the emergence of pandemic influenza in the US and North American populations, ensure the earliest warning possible of the first cases in North America and prepare a domestic containment and response mechanism.

Our activities in Stage 4 would be designed to contain the first cases on the continent, slow the first and subsequent pandemic waves of spread, provide antiviral treatment and prophylaxis, and implement the national response.

In Stage 5, we would support community responses to the extent possible to mitigate illness, suffering, and death, preserve the functioning of critical infrastructure and mitigate impact to the economy and functioning of society.

Finally, during Stage 6, our objectives would be to return all sectors to a pre-pandemic level of functioning as soon as possible and to prepare for subsequent waves of the pandemic.

And I'd like to note that the colors on this chart are not significant; other charts have been created using different color schemes.

We have a series of planning assumptions in the US. For example, we assumed that the seasonality of a pandemic cannot be predicted with certainty. However, we do know that the largest waves in the US during the 20th century pandemics occurred in the fall and winter. Experience from the 1957 pandemic may be instructive in that the first US cases occurred in June, but no community outbreaks occurred until August, and the first wave of illness peaked in October.

Susceptibility to the pandemic influenza sub-type will be universal, the clinical disease attack rate will be 30% in the overall population, illness rates will be highest among school age children, about 40% and decline with age.

Among working adults an average of 20% will become ill during a community outbreak. Of those persons who become ill, the proportion of people seeking healthcare may be 50% with the availability of effective antiviral drugs.

The number of hospitalizations and deaths will depend on the virulence of the pandemic virus, as you'll see in the next slide. With respect to the identification of risk groups, we assume that the groups likely to suffer from severe and fatal infections cannot be predicted with certainty.

During the annual fall and winter influenza season, infants, older adults, persons with chronic illnesses and pregnant women are usually at greater risk of complications from influenza infection.

In contrast, in the 1918 pandemic, most deaths occurred among young previously healthy adults.

As I mentioned, we have been trying to estimate the burden of pandemic influenza. As you all know, seasonal influenza is a common but serious health problem. In the US, on average every year, there are approximately 36,000 influenza-associated deaths and more than 200,000 hospitalizations. In a pandemic, rates of illness, hospitalizations, and deaths will depend on the virulence of the pandemic virus. There were three influenza pandemics during the past century each with its own characteristics and impacts - 1918 Spanish flu, the 1957 Asian flu, and the 1968 Hong Kong flu. Based on modeling under two different scenarios, a 1957-like, mild pandemic and more severe 1918-like pandemic, we see the number of people hospitalized would range from 865,000 to 9.9 million, with 209,000 to 1.9 million deaths. These estimates are based on extrapolation from past pandemics in the US but do not include the potential impact of interventions not available during the 20th century pandemics including improvements in disease surveillance and advancements in clinical care.

Returning now to some of our other planning assumptions, the typical incubation period for influenza averages two days. We assume the same time period would exist for a novel strain that is transmitted between people by respiratory secretions. Persons who became infected may shed virus and possibly transmit infections for 1/2 to 1 day before the onset of illness.

Viral shedding and the risk for transmission will be greatest during the first two days of illness. Children will shed the greatest amount of virus, and therefore, are likely to pose the greatest risk for transmission. The possibility that people would be able to transmit disease before they are symptomatic has implications for our ability to effectively contain an outbreak and the interventions we would use.

On average, about two secondary infections will occur as the result of transmission from someone who is ill. Some estimates from past pandemics have been higher, with up to about three secondary infections per primary case. In an affected community, a pandemic outbreak will last about six to eight weeks.

Absenteeism may reach 40%, that estimate includes persons who are ill, persons who are caring for others who are ill, people who will not go to work for fear of becoming ill, and persons caring for children if schools are closed.

The level of absenteeism in the workplace may be influenced by the level of social interaction in that setting.

Finally, at least two pandemic disease waves are likely. Following the pandemic the new viral subtype is likely to continue circulating and to contribute to the occurrence of seasonal influenza.

There are several potential strategies being considered to help decrease the impact of a pandemic. They reflect the primary goals for public health systems to prevent or delay entry of a novel virus with pandemic potential into the US and to slow the spread of infection within the US so that the number of cases and subsequent deaths are decreased.

To prevent or delay introduction of the virus, we are considering imposing travel advisories and possibly some travel restrictions, establishing medical screening at points of departure from foreign ports and points of arrival in the US, isolating ill passengers who appear to be infected with the novel virus, and potentially quarantining on a short-term basis other passengers who may have been exposed to such ill travelers.

We recognize how critical it will be to quickly identify cases so that we can institute pharmaceutical and non-pharmaceutical public health interventions including, for example, the provision of antiviral treatment and isolation for persons who are ill, voluntary quarantine for those persons who have been exposed, social distancing, which admittedly is not a great term, to decrease disease transmission in a community, including possibly closing schools, limiting public gathering, encouraging better hygiene such as frequent hand washing and respiratory etiquette and encouraging people to maintain a distance of three feet from others because we think the virus will be spread primarily via droplets, and use of vaccine once it becomes available.

With respect to vaccination, it's important to remember that it will take time to develop and distribute large quantities of vaccine to protect against a pandemic influenza strain.

Development and distribution of vaccine for pandemic cannot fully begin until the actual pandemic strain is identified. Even production and distribution of current seasonal vaccine takes six to nine months from identification of the vaccine strain.

In planning for a pandemic we need to consider the potential implications of some of these proposed measures. For example, how will we ensure that we can provide the essential services or support needed for people who are isolated or quarantined? How will limitations on travel affect business continuity or our ability to import critical medical products? How will limitations on public gatherings be accepted by the public? What changes in the workplace will be needed to avoid the transmission of disease? What levels of worker absenteeism will result from school closures, if closures occur? How will we address concerns of those people who are not members of the priority groups designated to receive the initial doses of vaccines, and with the limited supply of antivirals available, how can we ensure they are effectively reserved for containment purposes?

Now that I've given a broad overview of federal planning efforts in general I will use most of the remaining time to focus on domestic surveillance planning.

One of our surveillance objectives is to ensure that we have sensitive and comprehensive laboratory epidemiologic and clinical systems to reliably detect and monitor the occurrence of pandemic influenza in each phase.

We must be able to reliably detect and investigate initial cases and clusters of highly pathogenic avian influenza disease or disease associated with other influenza virus subtypes with pandemic potential.

We need to have the capability to determine and track trends in the impact of disease in affected areas. We need to be able to monitor antigenic and genetic changes in circulating influenza viruses including the prevalence of antiviral resistance.

And equally important, we need to be able to assess the effectiveness of treatment guidelines, vaccines, antivirals, and public interventions and have data available to inform decision-making including the need for changes in our policies and practices.

To help establish and enhance our systems to detect and monitor a pandemic, we are providing standardized influenza reagents for testing and research. These reagents are being developed and distributed domestically and globally.

For example, early this year a new laboratory based rapid test for detecting influenza A-H5 was developed by CDC and approved by FDA.

We also need more sensitive and specific point of care rapid diagnostic tests, and therefore are working to promote the development of these point of care tests and hopefully their subsequent evaluation, licensure and use.

We will train epidemiologists and other public health professionals in detection, response and investigation methods to help build domestic capacity, as well as to serve as resources for providing technical assistance for other countries as needed and appropriate.

We need information about what is happening in other countries to help guide our own case definitions and case investigation approaches.

We are creating and updating surveillance methods protocols, case definitions and specimen collection handling testing guidelines, for investigating and reporting suspect and confirmed cases. For example, in early June we released updated guidelines for testing persons suspected of having H5N1 avian influenza.

We're also developing materials to ensure that providers and the public are aware of how to identify and report suspect or actual cases.

In addition, because of concerns regarding the increased demand on the healthcare system, we are drafting information regarding the utilization of health services.

To help with the detection of initial cases and clusters, we will continue our routine surveillance system for influenza. Each week, approximately 130 US, WHO and national respiratory and enteric virus surveillance system collaborating laboratories report the total number of specimens, respiratory virus testing and the positive identifications of influenza A or B viruses.

The WHO collaborating labs report these data by age group. The laboratories that are participating are in state and local health agencies, universities and hospitals.

Through the sentinel providers surveillance network, each week from October through May, approximately 1,300 healthcare providers report the number of patient visits for the week and the number of those patients examined for influenza-like illness by age group. A subset of the providers continues to report year round. The participating health care provider may also collect nasal and throat swabs for virus isolation.

Through the 122 cities mortality reporting system, each week throughout the year, the vital statistics offices of 122 U.S. cities report the total number of death certificates filed due to all causes for that week and the number of deaths for which pneumonia or influenza was listed on the death certificates in any position on the certificate. A seasonal baseline is calculated, and if the proportion of pneumonia and influenza deaths for a given week exceeds the baseline value for that week by a statistically significant amount then influenza-related deaths are said to be above the epidemic threshold.

Influenza-associated pediatric deaths is a newly added nationally notifiable condition. Laboratory confirmed influenza-associated deaths in children less than 18 years of age are reported through the nationally-notifiable disease surveillance system.

In addition, the Emerging Infections Program (or EIP) Influenza Project conducts surveillance for laboratory confirmed, influenza-related hospitalizations in persons less than 18 years of age in 57 counties, covering 11 metropolitan areas of 10 states.

EIP cases are identified by reviewing hospital laboratory and admission databases, and infection control logs for children with a documented positive influenza test conducted as a part of routine care.

The New Vaccine Surveillance Network or NVSN, provides population-based estimates of laboratory confirmed influenza hospitalization rates for children less than five years old residing in three counties.

Children admitted to NVSN hospitals with fever or respiratory symptoms are prospectively enrolled and respiratory samples are collected and tested by viral culture and reverse-transcriptase, polymerase chain reaction analysis. NVSN estimated rates are reported every two weeks.

We do recognize that our routine system may not detect initial cases in a pandemic; hence, the need for enhanced surveillance especially given the potential for sub types with pandemic potential including H5N1 to be introduced by travelers and persons who have been exposed to infected birds. Increasing awareness and testing by U.S. physicians in general will be critical.

We will develop methods to identify and investigate suspect cases among travelers, identified prior to or en-route, as well as those travelers who have recently returned from infected areas.

As I mentioned earlier, guidelines will be developed and disseminated to the poultry and swine industries, and when any avian or swine influenza infections occur, active surveillance will be conducted among persons with

exposure to the infected animals to detect any subsequent human cases that may result from animal to human transmission.

We will work with healthcare providers, institutions and infection control societies to develop protocols to collect surveillance data on suspicious clusters of illness among healthcare workers.

Comparable disease surveillance activities will be carried out for laboratory workers with potential for exposure to avian influenza or other novel virus strains.

When initial cases or clusters are identified, we will have protocols and questionnaires, case definitions, and training and educational materials available to guide the investigation. We will work to establish systematic approaches that will enable us to describe the clinical features of the cases and to assess the risk factors associated with infection.

We will be particularly interested in the effectiveness of - and compliance with recommended guidance regarding - the use of personal protective equipment such as the use of gloves, masks, goggles, and disposable gowns when culling infected poultry.

To prevent the further spread of disease, the case investigation information will be used to develop or revise preventive measures, case management approaches, and risk communication messages.

As part of these efforts, we will provide algorithms for specific collection, handling and testing of specimens, establish systems to facilitate electronic reporting and ensure that privacy and confidentiality issues are addressed.

We are establishing and enhancing surveillance systems that will help us to determine and track trends, in the impact of disease in affected areas including deaths and hospitalizations in the general population and among subpopulations. And again, here we will be relying on enhancements to our existing routine surveillance system.

Our efforts to track the impact of disease will include being able to monitor the safety of the workplace and the continuity of operations in critical infrastructure functions, for example, the healthcare sector.

These data along with other information will be used to assess the need for changes in disease containment strategies such as social distancing approaches and the use of medical countermeasures, including the prioritization of vaccines and antivirals.

Before moving on to the next slide, let me just note that we do realize that given limited human resources and a large number of cases, some jurisdictions will only be able to conduct core surveillance activities and focused epidemiologic assessments, and in another areas, routine surveillance systems may no longer be efficient. We will be working with state and local public health officials to identify thresholds for transitioning between the different levels of surveillance activities.

Because influenza viruses undergo constant antigenic change, both virologic surveillance in which influenza viruses are isolated for antigenic analysis and disease surveillance are necessary to identify influenza virus variants and to monitor their health impact in populations.

As I just noted, we realized that human resources will be limited. Therefore, we are considering using the EIP, NVSN and/or other sites such as large healthcare facilities or networks with electronic medical record systems to conduct epidemiologic studies to assess or monitor treatment guidelines, vaccine effectiveness and antiviral effectiveness and resistance.

As I wrap up my presentation, I'd like to spend a few minutes talking about what you can do to prepare for a pandemic. To assist with planning efforts, the Department of Health and Human Services and CDC have developed a series of checklists that identify important specific activities that individuals and organizations can do to prepare.

A series of checklists have been created specifically for the healthcare sector including emergency medical service and medical transport, home health care services, hospitals, long-term care and other residential facilities, and medical offices and clinics. In general, each checklist includes action steps to plan for the impact on the organizations and their operations, plan for the impact on people involved with these entities, to establish policies to maximize infection control, to allocate resources to protect health and safety, to communicate and educate staff and clients, and to coordinate with external organizations. These checklists are available on the www.pandemicflu.gov Web site.

Again, as a reminder of the link between seasonal and pandemic influenza preparedness -- protecting yourself, your staff, your family and your patients against infection by seasonal influenza is important to help everyone stay as healthy as possible and to reduce the high rates of illness and mortality that occur annually because of influenza.

Some basic steps to take are:

One: promoting vaccination, including getting vaccinated against influenza yourself.

Two: encouraging good personal hygiene, such as frequent hand washing and respiratory etiquette.

Three: supporting the concept of staying home when people are ill.

And four: keeping informed about both seasonal and pandemic influenza.

These habits are good to practice now particularly because they will be critical during a pandemic.

In summary, it's important to remember that a pandemic will place incredible demands on the healthcare system. Given the large number of people who will be affected by a pandemic, it's important that preparedness activities begin now.

In my presentation this afternoon, I hope I've given you a sense of the national planning efforts, but if you aren't already aware of the details of your state and local community plans, now is the time to become familiar with them so that you'll know what will be expected of you and what resources may or may not be available.

In addition, please recognize that in preparing for and responding to a pandemic, early detection of initial cases and clusters is crucial if we are to slow the spread of disease and decrease the number of cases and deaths.

We at CDC are relying on each one of you to help in that effort. Again, if you don't already know the reporting guidelines, please contact your state or local health department to learn the procedures and ensure that you are informed of any subsequent revisions.

Finally – as with initial detection and reporting we will also need your assistance with monitoring the national state and local impact of the pandemic.

Here are two federal web sites that are useful resources should you want more information.

In addition, many of the professional societies and state and local public health agencies have information about pandemic influenza preparedness available on their web sites.

I thank you very much for your time this afternoon and I'm happy to take comments or questions.

Diana Hadzibegovic: Thank you Dr. Smith. This was an excellent presentation.

I just need to remind our audience that this COCA conference call will be podcasted. Also I hope objectives from today's COCA conference call will

help the audience to be familiar with the National Strategies for Pandemic Influenza, understand the basics of pandemic preparedness planning assumptions and identify key surveillance objectives.

We can start now - questions and answer session and let me remind one more time, audience - that you can also send us a question at the coca@cdc.gov. One more time, C-O-C-A@cdc.gov.

Operator, could you please start the question and answer session?

Coordinator: Thank you. If you would like to ask your question, please press star-1 on your phone. You will be notified to asking your question. And to withdraw your question, press star-2. Again, please press star then 1 on your phone for your question. One moment, please.

Question: Yes, thank you very much for this overview. One of the things that I think concerns me is we've been talking about this really since about 1999. And it just seems to me that we're still talking and I'm concerned that we think we may be ready and we have a lot of assumptions, but I don't think we're truly prepared for this.

Nicole Smith: I would agree that planning activities have been ongoing for many, many years. Although I think that we are making more progress in our preparedness work, clearly, there is more work to be done.

I think that one of the objectives for this call is to help raise awareness, and I would be interested in hearing more from you about some of the more specific things that we can do to actually achieve preparedness.

Q (cont.): One of the major issues we have is something so simple as the storage and availability of N95 masks. How are we going to have them available? How are we going to get enough to use for that length of time? Where are we going to store them at until we need them? You know, all those little details that drive us in the trenches [crazy?] because we can't figure out how we are truly going to make this happen.

Nicole Smith: I agree that's certainly a difficult issue -- dealing with surge capacity, in general -- and thinking about surge capacity and the availability of medical supplies. I think that in one of the future COCA calls, infection control practices will be addressed.

Q (cont.): Thank you.

Question: Yes, thank you.

I was - I'm in charge of preparedness committee for avian flu at our school and one of the things we've been discussing is who would initiate and under what circumstances would a quarantine be used at our school? You know, specifically in the event that an outbreak took place in our - on one of our residence halls.

Nicole Smith: Well right now, much of our discussion has been focusing on voluntary quarantine, and the philosophy behind that approach is basically to try to keep the illness out of the community -- so that the community (and when I say community, I mean businesses and essential services) -- can continue to function.

With respect to who would make - for example, an official declaration of a quarantine, that may vary by circumstances within your state, within your local health jurisdiction or even your own institution. May I ask if you have been having dialogues with your local health department, with your state health department, or if you've been thinking about voluntarily closing your school?

Q (cont.): Yes. Well, actually we've been thinking about many aspects of preparing for such an outbreak. But interestingly enough, I've left quite a number of messages with our local department here with no real return calls, very little information regarding specifics like when and who and ways to initiate a quarantine, specifically, I'm wondering, you know, if someone were to become symptomatic like a student or a few students on a particular floor, who would be the one to identify what they have as actually being avian flu?

Nicole Smith: If you're thinking about it from a school's perspective, depending upon the timing of when these cases are detected, if for example, and I don't know the age group that we're considering; but let's say, for the sake of discussion, that it's a college -

Q (cont.): Yes.

Nicole Smith: And so potentially, let's say you have students that have been traveling overseas. So if you have a student that returned let's say from an affected area who was suspected of having H5N1, that student - I'm assuming would initially seek care from school health services and that somebody in the school health services unit would contact the local health department and report that case. And then again there will be some of sort of investigation and a recommendation that for those students that may have been exposed to that ill student that had traveled - for those students, there should be some sort of emphasis on voluntary quarantine.

Now, that's a situation where we are not in a pandemic or maybe we're early on in a pandemic.

The situation may be very different later on in the different phases or the different stages.

Q (cont.): Thank you very much.

Question: Yes, I recently participated in a National Teleconference Call, facilitated by the Airport Council International.

And in that call, several airports across the nation gave basic information on their planning on pandemic flu. It was somewhat obvious to us that as I've listened to their reporting that there was a need for rapid diagnostics.

The reason for that is that if a pilot identifies a suspected individual on the plane to have pandemic flu that they will land the plane and quarantine the entire plane.

If that has done here, our nearest laboratory is 3-1/2 to 4 hours away, and waiting on the results from that so we're looking at numerous hours of an airliner on the tarmac totally quarantined.

And that can - with that situation we'll have cases all across the nation.

Can you discuss the update on rapid diagnostics for pandemic flu as well as diagnostics - rapid diagnostic that would differentiate between seasonal flu and pandemic flu?

Nicole Smith: Part of our challenge in establishing the rapid diagnostics for a pandemic influenza virus is that we also have to identify that specific viral strain. So what we are doing now is we are developing capacity to have rapid diagnostics, and I guess I would distinguish rapid diagnostics meaning point of care or point of use for H5N1 -- but again, we don't necessarily know that H5N1 will be the next pandemic strain. But CDC is working with NIH, FDA and I think the Department of Defense is also involved, and clearly working with the private sector in trying to develop these rapid diagnostic tests that would be available at the point of use, which is different from having rapid diagnostics tests available in the laboratory setting.

Q (cont.): Are there any rapid diagnostic test that for a point of use that differentiate between the seasonal and pandemic flu?

Nicole Smith: Currently, no, and again, let me caution, that we won't be able to have a test until we actually have the pandemic virus identified, but we are developing

the systems and certainly preparing right now and working toward developing a rapid diagnostic point of use test for H5N1, but it's not available.

Q (cont.): And it's possible to develop the rapid diagnostic test for seasonal flu based on the information used to determine the influenza - seasonal influenza vaccine for that year?

Nicole Smith: We have the rapid diagnostic tests, as you've pointed out for seasonal influenza. We also have tests for influenza A. And we're building on that technology or that expertise so that we can use those approaches and those techniques when we have a pandemic virus strain identified. But right now, we can't develop the test because we don't know what that virus is or will be.

Q (cont.): Okay. Thank you.

Question: I wanted to say to one of the people who called in that Contra Costa has developed a school packet that includes letters to schools and talks about health officer authority and talks about closing schools and all of that. So if anybody is interested they can download that from our web site at cchealth.org. Again, cchealth.org.

My comment or my question is, I know in the national strategy in the response plan it talks about when the first human case occurs in the United States and the travel restrictions that could be put in place and I live in the San Francisco bay area and we have three international airports. So, I'm just wondering could you talk about whose authority and how that would that would happen if there were a case that came into say an airport and there was to be travel restrictions placed.

Nicole Smith: If you don't mind, I'm not going to answer that question because I think that that's something that will be covered in a future call. And it may - the actual response may vary from one airport to another. So, I think we'll address this question later. I know Diana has this system in place for answering questions that aren't actually answered live. Or if you don't mind, I will postpone answering that question.

Diana Hadzibegovic: We are having another COCA conference call on quarantine and avian influenza preparedness on the 21st of this month. Please attend that conference call, I believe, that your question would be answered. And also, you can send us an email at coca@cdc.gov and we will try - we will make sure to answer your question.

Nicole Smith: But I would like to thank you for raising the points about the materials that you've developed for schools. As I mentioned, we have checklists for

healthcare settings, there are also checklists for several other sectors including schools.

Question: I have a question. I'm one of the lucky people who's allergic to the egg-based vaccine. How close are we getting to actual cell-based vaccines?

Nicole Smith: Well, cell-culture based vaccines are several years away. So what we would consider for you is likely the use of antivirals.

Q (cont.): Okay. Thank you.

Question: Yes. Good afternoon. A lot of the discussion centered around people that are infected and come over to the United States. And the question I have is, what is CDC doing to track, monitor, and test targeted groups of migratory birds? Although we haven't had that problem or yet I mean that is one of the possibilities that's been discussed.

Nicole Smith: CDC is for the most part not directly involved in surveillance for wild birds. The Department of Interior, Fish and Wildlife Service and USDA are tracking potential infections among animals -- migratory birds as well the domestic poultry. Our primary role would be in assisting with the investigation should an outbreak occur again to ensure that people that have had contact with the infected animals, birds in this case, do not themselves become infected.

Q (cont.): Are there any selected groups of birds that have been identified as to be cautious about?

Nicole Smith: You mean within the US specifically? I'm not aware of that, but we can look into that. Again, the Department Interior and the USDA have been taking the lead for animal surveillance.

Q (cont.): Thank you.

And one last question going back to the H5N1 vaccination - vaccine, I saw on the news the other that that there was a breakthrough and a possible H5N1 vaccination. Could you elaborate more on that?

Nicole Smith: As you know, the US government is supporting several manufacturers in developing new vaccines in the US, and in addition, there are manufacturers that are developing their vaccines in other countries. The announcement that you're referring to was by one of the manufacturers that is using adjuvant in their vaccine. In their initial results, they found that by using the adjuvant, a proprietary adjuvant, they've decreased the level of antigen that's required to develop an immune response. So this has potential

implications in terms of vaccine production capacity, if in fact that vaccine where ever to be commercialized.

Q (cont.): Thank you very much.

Question: I'm in Oklahoma City, I have a private consulting group. And this is really more of an observation on what was mentioned earlier on one of the questions.

In our correspondence with organizations such a small towns, to even larger cities, small businesses to even a business that's consulted with us that has 85,000 employees, school systems and even our first responders such as single physician group, clinics, and even some hospital systems, it's really been almost the lackadaisical approach if you could use that terminology, in really preparing, almost planning to plan and to me that's somewhat concerning, are there any thoughts from your end such as there was just lack of interest, really early in planning or what have you noticed or is this just anecdotal in my location?

Nicole Smith: I think one of the challenges in planning - especially in planning for a pandemic is the uncertainty that we have.

We haven't been able and we are not able to tell people what the probability is that the next pandemic will occur, let's say in the next two years, the next five years... at this point, we cannot say how severe that pandemic will be. And so I think that there are some real challenges in planning for an uncertain event, but let me counter that by saying some of that may depend upon what you experience is; for example, I'm originally from California. I grew up in area like Contra Costa County where the likelihood of a large earthquake exists and so there was a lot of encouragement around planning for an earthquake. Similarly, if you live in an area of the country that's affected by hurricanes, tornados, ice storms, people, I think, have that sense of preparedness, but it may be or part of the difference is what can be done for that sort of event at the individual planning level versus what needs to be done at a business or institution, community, or even state level. From my experience in talking with some businesses around pandemic preparedness, what they've learned to appreciate is perhaps putting pandemic preparedness activities in an all hazards context so if you are prepared for: a loss of your facility, you know, let's say, for example, the power is out; or if you prepared for a loss of what we would called systems, maybe your information technology system, your phone system is down, your computer is down; and, if you are prepared for a loss of staff -- if you are prepared for those three elements, you're at least somewhere along the way in preparing for a pandemic, but it would then depend upon how severe the pandemic is; what the businesses' role is in the

pandemic and how likely are we able to decrease certain services while also preserving the more critical ones like healthcare.

Q (cont.): Okay. And at least with a follow-up on the first responders, if they are not prepared how would that affect the possible worst scenario, would that have any effect or would that just become a local experience?

Nicole Smith: First responders - do you mean EMS staff, public safety workers, do you mean physicians?

Q (cont.): So, specifically more of single physician, clinic physician, groups with multi disciplines and even some hospital systems?

Nicole Smith: Well, depending upon the severity of the pandemic, the needs would vary, I mean in some ways if it's, let's say, a severe pandemic, every single provider is likely to be overwhelmed.

Q (cont.): Okay.

Nicole Smith: And therefore every single provider is critical. If it's less severe, we're still going to have a need for the provider communities, and I think that's one of their challenges of making sure the healthcare sector is prepared not only again in thinking about what would be done to meet existing patient demands. I mean, think about the influenza season – the annual season – and how many hospitals have to redirect their patients.

Q (cont.): Typically many.

Nicole Smith: Typically many.

And I would also say, we accept that.

Q (cont.): Right.

Nicole Smith: But that's in a situation where - all right – we're redirecting our patients and we have some where else to direct those patients to.

Q (cont.): But in the pandemic you would conceivably not

Nicole Smith: Exactly, exactly. And that's again, one of those challenges where we have to consider what are the alternatives that we can provide through existing medical facilities -- thinking about community-based or alternate sites of care; and, how can we encourage the public to provide self managed care?

Q (cont.): Right.

Nicole Smith: And it's a balancing - I mean it's definitely a balance.

Q (cont.): State of awareness.

Nicole Smith: For example, again, in talking again with some businesses they've said that they will recognize that their employees are ill, that they will require a physician's verification...

Nicole Smith: ...that may be forcing potentially a lot of people to go to the doctor that may be able manage themselves at home.

Q (cont.): Right.

Nicole Smith: Is that a policy that we would want to promote in a pandemic?

Q (cont.): No.

Nicole Smith: These are the some of the questions and the issues that we are working through right now.

Q (cont.): Right.

Well, thank you so much.

Question: Sorry. I wanted to learn more about the availability of either rapid testing or any other confirmatory testing in an outpatient setting. I think the question was asked in a different way before, but I still don't understand the answer. Thank you.

Nicole Smith: If I understand your question and the previous question, you are wondering why we don't yet have a point of care or point of use rapid diagnostic test against a pandemic virus. It's not a generic influenza test, it's a test that is specific to the strains that are circulating. So that is our primary challenge in developing a rapid diagnostic test for a pandemic virus. We do not know what that pandemic virus is or will be right now. So, what we are doing is in thinking about H5N1 as a possible candidate, we are developing a rapid diagnostic test point of care, point of use, for H5N1, but it is not a simple process.

Diana Hadzibegovic: Dr. Smith we have time for just one more question.

Question: Yes, thank you. Can we state with any sort of probability or the - that one of these waves that start possibly in one of our areas that are airport heavy coming in from either - I'm on the East cost in the district of Columbia area,

we have BWI, we have Dulles, we have Philly international, several airports up in New York, can we state with any kind of certainty that it might start in one of those areas.

Nicole Smith: No, I'm sorry, we cannot say where it will start. We do not know.

Q (cont.): Okay. Thank you.

Diana Hadzibegovic: Thank you, Dr. Smith. This was a great presentation. Great questions and answers and I would ask everyone who didn't have a chance to ask a question today just send it to coca@cdc.gov. Please stay tuned for our next conference call on August 21st on quarantine in avian influenza preparedness.

Thank you very much and until the next call. Bye-bye.