DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration
Silver Spring MD 20993

STATEMENT OF

JESSE GOODMAN, M.D.

ACTING CHIEF SCIENTIST
DEPUTY COMMISSIONER FOR SCIENTIFIC AND MEDICAL PROGRAMS

OFFICE OF THE COMMISSIONER

U.S. FOOD AND DRUG ADMINISTRATION

DEPARTMENT OF HEALTH AND HUMAN SERVICES

BEFORE THE

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

U.S. HOUSE OF REPRESENTATIVES

HEARING ON

"THE ADMINISTRATION'S FLU VACCINE PROGRAM: HEALTH, SAFETY, AND DISTRIBUTION"

SEPTEMBER 29, 2009

RELEASE ONLY UPON DELIVERY

INTRODUCTION

Mr. Chairman and Members of the Committee, I am Dr. Jesse Goodman, the Food and Drug Administration's (FDA or the Agency) Acting Chief Scientist and Deputy Commissioner for Scientific and Medical Programs. In that capacity I have been leading FDA's efforts to respond to the novel 2009 H1N1 influenza virus. Previously, I directed the Agency's Center for Biologics Evaluation and Research (CBER), and have extensive experience in the development and evaluation of influenza and other vaccines. I have served as an advisor to the World Health Organization (WHO) on immunization programs and I am a practicing infectious disease physician.

I appreciate the opportunity to be here today to describe FDA's role in this continuing public health response. The ongoing collaborative response to this pandemic, including the success in producing vaccines, is a product both of hard work and continuing investment, including the support of Congress for the preparedness activities of the Department of Health and Human Services (HHS). These initial results have been gratifying, although significant challenges remain. Today, I also will highlight opportunities to continue to enhance our nation's pandemic vaccine preparedness and response capacity.

FDA plays a vital role in U.S. and global preparedness for, and response to, challenges such as those presented by the 2009 H1N1 influenza virus. FDA is part of a team of HHS agencies. When the 2009 H1N1 influenza virus emerged in the spring, FDA immediately established an incident command system to speed and coordinate our response and to facilitate collaboration with and outreach to our external partners. All FDA Centers are engaged in this incident

command system, which includes several focused teams (e.g., Vaccine, Antiviral, Diagnostics, Personal Protection, and Consumer Protection), as well as Operations, Logistics Communications, International and Legal components. This approach allowed us to work hand in hand with our sister HHS agencies, the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC), to rapidly mobilize the emergency public health response. This effort included FDA's issuance of Emergency Use Authorizations for needed antiviral and diagnostic products, and enabled us to immediately initiate the complex process of preparing a vaccine. As you have heard, the good news is that the vaccine development effort has succeeded. The initial doses of licensed vaccines will be available very soon. These are made in the same manner as the millions of doses of seasonal influenza vaccines that are made and used safely every year.

Developing Vaccines

From the beginning, FDA worked tirelessly with our sister HHS agencies, other U.S. government agencies, WHO, foreign governments, regulatory agencies, and vaccine manufacturers to facilitate the production and availability of safe and effective vaccines against this virus. FDA/CBER and CDC are WHO Collaborating Centers, and as such, have a long history of working together and with global partners. Each year, based on surveillance data about influenza strains circulating throughout the world, WHO and FDA typically recommend changes in some of the three influenza strains contained in seasonal vaccine. Every year new influenza vaccines are made and each year can present new challenges. While we have both exercised our plans and built our capacity, our intense activities preparing for the seasonal

influenza every year, have been excellent preparation for us to handle the demands of an influenza pandemic.

Immediately after this novel H1N1 virus was detected, FDA began working with CDC and other laboratories around the world to generate the influenza virus reference strains that were needed to begin vaccine manufacturing. FDA and other key international regulatory laboratories developed and calibrated the vaccine potency reagents needed by manufacturers to make their vaccines. We worked with NIH and all U.S.-licensed manufacturers to design and help rapidly mobilize efficient clinical studies to evaluate candidate vaccines. These studies were designed to help determine the optimal number of doses (one or two) needed to protect people of different ages, and whether a higher-than-normal dosage of vaccine or vaccine-containing adjuvants (which can boost the immune response) might possibly be needed.

Enhancing Influenza Vaccine Infrastructure and Capacity

With the support of Congress, FDA and our sister HHS agencies have been engaged for several years in a continuing effort to strengthen influenza vaccine infrastructure and pandemic preparedness. This has helped significantly in the response to the 2009 H1N1 influenza virus. After 2004 when a major manufacturer could not provide vaccine to the U.S. market, we took several important steps to enhance the capacity and diversity of our supply, as well as to better prevent and detect potential manufacturing problems. We encouraged manufacturers of influenza vaccines licensed elsewhere to work with us and seek licensure in the United States. As a result of such efforts, in the last five years the number of U.S.-licensed influenza vaccines

increased from three to six, and seasonal vaccine production increased from 55 million doses in 2004 to an estimated 115 million for this 2009/2010 season.

The Biomedical Advanced Research and Development Authority (within the HHS Office of the Assistant Secretary for Preparedness and Response), working closely with FDA, has taken a number of additional steps that have put us in a much better position to respond to a pandemic. Examples include keeping a year-round egg supply to allow vaccine production at any time and supporting the retrofitting of a U.S.-based manufacturing facility, licensed on May 6, 2009, that substantially increased manufacturing capacity. Throughout the spring and summer, we actively engaged with HHS colleagues and manufacturers to increase capacity in order to speed and increase vaccine availability. In addition, FDA and our sister HHS agencies have worked with WHO to support global regulatory, technical, and manufacturing capacity, including HHS support of grants to developing countries to build influenza vaccine manufacturing capacity.

Licensure of the Influenza A (H1N1) 2009 Monovalent (Single Strain) Vaccines

On September 15, 2009, FDA approved supplements to the existing biologics license applications of four U.S.-licensed manufacturers for vaccines made against the Influenza A (H1N1) virus. These vaccines are made by CSL Limited, MedImmune LLC., Novartis Vaccines and Diagnostics, Ltd., and Sanofi Pasteur, Inc. As with the currently licensed seasonal influenza vaccines, none of these vaccines contain an adjuvant.

Each year the new seasonal influenza vaccine formulation is licensed as a "strain change supplement" to each manufacturer's existing U.S. license. FDA is very experienced with the

development and production of these influenza vaccines, which are produced by the identical licensed egg-based manufacturing processes and which have an extensive track record of safety and effectiveness in the United States.

FDA determined that a monovalent influenza vaccine manufactured according to the same process as licensed seasonal influenza vaccines, but formulated to contain the pandemic 2009 H1N1 influenza virus strain antigen, could be approved as a strain change supplement to existing licensed influenza vaccines. This is consistent with how strain changes are approved each year as supplements to licensed influenza vaccines, which include seasonal H1N1 strains. This proposed regulatory pathway to licensure was discussed in an open public meeting of FDA's Vaccines and Related Biological Products Advisory Committee (the Committee) on July 23, 2009. Presentations were made by representatives from FDA, our sister HHS agencies, NIH and CDC, and industry. The Committee supported FDA's proposed regulatory strategy for approving the pandemic H1N1 strain change.

FDA does not require clinical studies for strain changes for U.S.-licensed inactivated influenza vaccines. However, clinical studies were undertaken with vaccines made from this strain, because it was important to determine the optimal dosage and number of doses, given the lack of measured background immunity to the 2009 H1N1 influenza strain. The clinical studies were intended to inform whether the 2009 H1N1 influenza vaccine, when given at the usual dose used in seasonal vaccines, is optimally immunogenic (able to generate an immune response likely to protect against infection), and whether older children and adults, who normally need one dose of seasonal vaccine, might need two doses. FDA worked with manufacturers and NIH to design these clinical studies. As mentioned, the data available to date from several of the trials,

including from our colleagues at NIH, show that a single dose induces a good immune response in healthy adults and is well-tolerated. Preliminary data from NIH trials in children were released on September 21. These results indicate that the immune response in 10 to 17-year-old children also is similar to the seasonal influenza vaccine in that a single dose produces a good result. As is the case with seasonal influenza vaccines, younger children generated a less robust immune response to one dose of vaccine, and are likely to require two doses. Again, the vaccine was well-tolerated. Trials in pregnant women have just begun and preliminary results will be available in late October. As with seasonal vaccines also recommended for pregnant women, it is expected that a single dose will be immunogenic and well-tolerated.

VACCINE QUALITY AND SAFETY

Manufacturing and Quality/Safety Oversight

While FDA has been a key participant in building capacity and helping the vaccine enterprise to meet public health needs, we have a particularly important and unique role in the oversight of vaccine quality and safety. These pandemic 2009 influenza vaccines are subject to the same stringent manufacturing and quality oversight processes that are in place for licensed seasonal influenza vaccines. Each facility is inspected annually for compliance with current Good Manufacturing Practices. Extensive in-process quality control and product testing (such as for potency and purity) are required at multiple stages of the manufacturing process. Each lot of vaccine manufactured must be reviewed and tested by the manufacturer, and results and samples of every lot must be provided to FDA. No lot can be used until testing is completed and it is released by the manufacturer and FDA.

Vaccine Safety and Safety Monitoring

We expect potential side effects for the H1N1 vaccines to be similar to those seen following vaccination with seasonal vaccines. Following injection, the most common side effect is soreness at the injection site. Other side effects may include mild fever, body aches, and fatigue for a few days after inoculation. Following inoculation with the nasal spray vaccine, the most common side effects include runny nose or nasal congestion (for all ages), sore throats (in adults), and fever (children two to six years of age). Although we expect potential side effects to be similar to seasonal vaccine, unexpected rare adverse events are a potential risk of any medical product, even those associated with a long, excellent record of safety. Therefore, FDA and CDC, working with multiple partners, will very closely monitor the safety of the 2009 H1N1 influenza vaccines.

Every day in the United States some previously healthy people will have serious and unexpected medical events, regardless of whether or not they have received a vaccine or another medical intervention. These are what we call "background rates" or the cases we would expect to see whether people are vaccinated or not. It is important to realize that given the large number of people who are likely to receive the 2009 H1N1 influenza vaccines, some previously healthy people will, by chance alone, experience serious and unexpected medical events which will coincide with the time period after immunization. It is challenging, but important, to distinguish such events that are coincidental and not caused by vaccine from unexpected rare events that may be related to immunization. Therefore we recognize the need to prepare for a possible increase in the number of reports of potential adverse events and to rapidly detect and accurately evaluate those reports associated with the use of these vaccines.

FDA is collaborating with CDC and other components of HHS, and with other government agencies, to enhance the capacity for adverse event safety monitoring during and after the 2009 H1N1 influenza vaccination program. Efforts are underway to establish a robust network to share information in real time. The network will build on the well-established Vaccine Adverse Event Reporting System and Vaccine Safety Datalink by integrating capabilities from the Department of Defense, Department of Veterans Affairs, and Centers for Medicare and Medicaid Services, as well as state, territorial, tribal, and local public health medical and private sector health care entities. FDA also is engaged with international regulatory partners on pharmacovigilance planning efforts. This is part of an over-arching effort by the Federal Immunization Safety Task Force led by the HHS Assistant Secretary for Health and the HHS Assistant Secretary for Preparedness and Response. FDA also is participating with others in a preparedness exercise to improve coordination and collaboration between agencies once reports begin to come in.

Looking Ahead

Much has been accomplished in a very short time by the strong collaborative efforts of those working inside and outside our government. While we are facing and responding well to this public health challenge, we should ask ourselves, even in the midst of it, what can we learn to do better? While we are gratified that vaccine will soon be available, there are many opportunities to continue to develop the science and capacity needed to enhance our pandemic vaccine preparedness for potentially even more serious outbreaks.

First, we need more capacity, both in the United States and globally, to produce vaccines. In the United States, major investments in advanced vaccine development and manufacturing capacity, which include vaccines manufactured in cell culture systems or by use of recombinant

technologies, may offer a number of advantages in scalability and reliability. These efforts are ongoing. There are instances in which adjuvanted influenza vaccines may be needed or desirable, for example, when an antigen alone cannot induce an adequate protective immune response, or to help address dramatic shifts in strains that might occur as an outbreak evolves. HHS is funding the development and careful evaluation of such adjuvanted vaccines. At FDA's laboratories, we are conducting collaborative applied regulatory research to improve the assays, reagents, and tests needed to more rapidly and accurately evaluate, produce, and test the quality of current and future influenza vaccines. This work has the potential to expedite vaccine development, speed availability, and ensure vaccine quality using the most modern scientific methods. Ongoing scientific efforts at NIH and FDA are evaluating even more advanced approaches, such as DNA vaccines and "universal" influenza vaccines, which potentially may protect against multiple and evolving influenza strains. Although we already participate in collaborative work and technical assistance through WHO, a much broader global collaborative effort would be desirable.

Vaccines are only part of the picture. As we respond to this pandemic, we also should take the opportunity to learn from this novel virus and the public health response, in order to promote the development of needed antivirals, rapid diagnostics, and enhanced safety surveillance capacities, and identify remaining scientific and public health questions. Our continued work, from basic and applied science to the medical products and public health interventions that may be used to protect people in the United States and around the world, will benefit us in preparing for and responding to future biological threats.

CONCLUSION

FDA is fully committed to and engaged in protecting the public health during this challenging time. We believe we have an exceptional team in place to handle the challenges of the 2009 H1N1 influenza virus and continue to receive excellent cooperation and input from other government agency partners. I thank you for the opportunity to testify today and will be pleased to answer any questions from Members of the Committee.