

**SUMMARY REPORT**  
**of the**  
**NATIONAL BIODEFENSE SCIENCE BOARD (NBSB)**  
**September 25, 2009**

**NBSB VOTING MEMBERS PRESENT**

Patricia Quinlisk, M.D., M.P.H., Chair  
Ruth L. Berkelman, M.D.  
Stephen V. Cantrill, M.D.  
Roberta Carlin, M.S., J.D.  
Albert J. Di Rienzo  
Kenneth L. Dretchen, Ph.D.  
John D. Grabenstein, R.Ph., Ph.D.  
James J. James, M.D., Dr.PH., M.H.A., Brigadier General (Retired)  
John S. Parker, M.D., Major General (Retired)  
Andrew T. Pavia, M.D.  
Eric A. Rose, M.D.  
Patrick J. Scannon, M.D., Ph.D.

**NBSB VOTING MEMBERS ABSENT**

Thomas J. MacVittie, Ph.D.

**EX OFFICIO MEMBERS PRESENT (or designee)**

Terry Adirim, M.D., M.P.H., Associate Chief Medical Officer for Medical Readiness,  
Office of Health Affairs, U.S. Department of Homeland Security (*designated by  
Diane Berry, Ph.D.*)  
Michael Amos, Ph.D., Scientific Advisor, Chemical Science and Technology Laboratory,  
National Institute of Standards and Technology, U.S. Department of Commerce  
(*designated by Willie May, Ph.D.*)  
Joseph Anelli, D.V.M., Animal and Plant Health Inspection Service, U.S. Department of  
Agriculture (by phone)  
Hugh Auchincloss, M.D., Principal Deputy Director, National Institute of Allergy and  
Infectious Diseases, National Institutes of Health, U.S. Department of Health and  
Human Services  
Victoria Davey, R.N., M.P.H., Deputy Chief, Office of Public Health and Environmental  
Hazards, U.S. Department of Veterans Affairs  
Bruce Gellin, M.D., M.P.H., Director, National Vaccine Program Office, Office of the  
Secretary, Office of Public Health and Science, U.S. Department of Health and  
Human Services  
Rosemary Hart, Special Counsel, Office of Legal Counsel, U.S. Department of Justice  
Peter Jutro, Ph.D., Deputy Director, National Homeland Security Research Center,  
U.S. Environmental Protection Agency

Carter Mecher, M.D., Director for Medical Preparedness Policy, White House Homeland Security Council (by phone)  
Vincent Michaud, M.D., M.P.H., Director, Medicine of Extreme Environments, Office of the Chief Health and Medical Officer, National Aeronautics and Space Administration (*designated by Richard Williams, M.D.*)  
Aubrey Miller, M.D., Office of Counterterrorism and Emerging Threats, Office of the Commissioner, Food and Drug Administration, U.S. Department of Health and Human Services (*designated by Boris Lushniak, M.D., M.P.H.*)  
Bonnie S. Richter, Ph.D., M.P.H., Director, Office of Illness and Injury Prevention Programs, Office of Health, Safety, and Security, U.S. Department of Energy (*designated by Patricia R. Worthington, Ph.D.*)  
John Skvorak, D.V.M., Ph.D., COL, Commander, U.S. Army Medical Research Institute for Infectious Diseases, U.S. Department of Defense  
Daniel M. Sosin, M.D., M.P.H., F.A.C.P., Acting Director, Coordinating Office for Terrorism Preparedness and Emergency Response, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services

**Disaster Mental Health (DMH) SUBCOMMITTEE MEMBERS PRESENT**

Betty Pfefferbaum, M.D., J.D., Chair  
Elizabeth Boyd, Ph.D. (by phone)  
Lisa Brown, Ph.D.  
Brian Flynn, M.A., Ed.D.  
Stevan Hobfoll, M.A., Ph.D.  
Ann Norwood, M.D.  
David Schonfeld, M.D., FAAP

**EX OFFICIO DMH SUBCOMMITTEE MEMBERS**

Dan Dodgen, Ph.D., Executive Director  
Rachel E. Kaul, LCSW, CTS  
Dori Reissman, M.D., M.P.H.

**Staff of the National Biodefense Science Board**

Leigh Sawyer, D.V.M., M.P.H., CAPT, USPHS, Executive Director  
Erin Fults, Scientific/Technical Writer  
Don Malinowski, M.S. Program Analyst  
Jomana Musmar, M.S. Policy Analyst  
MacKenzie Robertson, Program Analyst  
Brook Stone, M.F.S., LT, USPHS, Program Analyst

## **CALL TO ORDER AND CONFLICT OF INTEREST RULES**

**Leigh Sawyer, D.V.M., M.P.H., Executive Director, National Biodefense Science Board (NBSB), Office of the Assistant Secretary for Preparedness and Response (ASPR), Captain, U.S. Public Health Service (USPHS), U.S. Department of Health and Human Services (HHS)**

CAPT Sawyer called the public meeting to order at 9:03 a.m., called the roll, and reviewed the Federal Advisory Committee Act (FACA) rules. CAPT Sawyer noted that the purpose of the meeting was for the NBSB to receive H1N1 activity updates from representatives of HHS. NBSB Chair Patricia Quinlisk chaired the meeting.

## **CHAIR'S REMARKS AND AGENDA OVERVIEW**

**Patricia Quinlisk, M.D., M.P.H., Chair, NBSB**

Dr. Quinlisk noted that most of the meeting agenda would be occupied by H1N1 updates, with a discussion at the end of the day from the Disaster Mental Health Subcommittee.

Dr. Quinlisk said that yesterday some of the NBSB working groups and the subcommittee held meetings which identified issues that the Board still needs to meet on and continue to address. Dr. Quinlisk then introduced Dr. Nicole Lurie, the Assistant Secretary for Preparedness and Response at HHS.

## **OPENING REMARKS**

**Nicole Lurie, M.D., M.S.P.H., Assistant Secretary for Preparedness and Response (ASPR), Rear Admiral, USPHS, HHS**

Dr. Lurie began her remarks by thanking the Board for its efforts and expressed her gratitude to the members for their dedication. Dr. Lurie considered the Board's work to be 'game-changing.' It was largely because of the Board's recommendation that the Department expedited its vaccination effort in October. She made it clear that ASPR wants to continue to engage the Board in a robust process of collaborative agenda setting.

A big part of the collaborative agenda moving forward will be the priorities that Dr. Lurie outlined for ASPR: 1) the first priority is to think about how to build individual and community resilience, which involves empowering and motivating people to take action; 2) the second priority is to think differently about this continuum from response to recovery—what is done early on in response sets the conditions for how individuals and communities recover; 3) the third priority is to figure out how to leverage the health care system in terms of preparedness and response; thinking more creatively about how to use the health care system's data for surveillance, using the system as an agent of change, and using the organized systems of delivery of care to reach difficult to reach populations. and 4) the fourth priority is to think about the development and delivery of countermeasures.

A number of the health plans have come together with the Department in a new vaccine safety monitoring system that is linking immunization registries to their claims data. Almost all of the health insurers have said they will pay H1N1 administrative costs and pay pharmacists to vaccinate regardless of whether or not there is a preexisting contract with the pharmacist. This process has made many of the health plans think about the need to structure their policies around preparedness. Dr. Lurie emphasized the

importance of using new technologies to link the public health and health care systems more closely, take care of affected populations more efficiently and remotely, and become better prepared overall.

In terms of what will inform the Department's immunization efforts going forward, Dr. Lurie said that ASPR has been thinking about what systems need to be upgraded and how to upgrade them in a way that provides a long-range return. Many of the upgrades revolve around surveillance systems. One of the current challenges is trying to ramp up a national vaccination effort on the back of a public health system that has been disinvested in over the past 25 to 30 years. Eventually there will need to be a national agreement on what it is the public health system does, and that function will need to be well-articulated to the American public. Building resiliency into the system is going to require a large collaborative effort. It is important to get more concrete about defining what is meant by community resilience and the preparedness aspects of resilience.

### **H1N1 SURVEILLANCE SITUATIONAL UPDATE**

**Anne Schuchat, M.D., Director, National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention (CDC), Rear Admiral, USPHS, HHS**

RADM Schuchat provided the Board with a snapshot of where CDC is going with H1N1 epidemiologically. In terms of at-risk populations, pregnant women make up one percent of the population, and account for six percent of H1N1 related hospitalizations and deaths. The 65 and over age group has largely been spared by H1N1. Among children, there has been a prominent role of neuromuscular and neurocognitive conditions like muscular dystrophy and cerebral palsy in the deaths reported. The highest rates of hospitalizations reported overall are in the 5 and under age group, with the second highest in 5-24 year olds. Going into the fall, CDC is moving to more syndromic reporting and sampling of the virologic data.

RADM Schuchat said that currently 4.6 or 4.7 percent of all outpatient visits are due to influenza-like illnesses; a higher rate than last winter with the February/March peak. She pointed out, however, that influenza is unpredictable and communities can be affected or unaffected over time. So far there has been an early increase in H1N1 in the Southeast, but it is now starting to level off or decrease in some regions. This is most likely due to early school openings. New school-guidance from the CDC has been issued that will hopefully minimize disruptions and maximize protection; closing schools will not be used as a first-line defense, and dismissing children from schools will be a rare circumstance. RADM Schuchat emphasized that a key pillar in the vaccination effort is communication.

On the subject of distribution, RADM Schuchat said that the plan going forward is the pro rata distribution of vaccine based on population for states. CDC is using the Behavioral Risk Factor Surveillance System (BRFSS) to track data about people who have had an influenza-like illness (ILI) in the past month. There is no good, quick serologic assay to confirm previous exposure to the 2009 H1N1 yet, but certainly the vast majority of people are still vulnerable to H1N1. The issue of ultimate impact is difficult

to predict. CDC is doing some modeling but the figures are not yet available. Younger people are not only getting the disease more often, but are spreading it easily as well.

One of the big fears looming over the vaccination effort is that the provider-office health system is not going to be as reliable a place to vaccinate very large numbers of people in a short period of time. RADM Schuchat concluded stating that the government is trying hard to coordinate internally within the different departments, and externally with the private sector using the national framework and four pillars.

#### **PANEL DISCUSSION SESSION I: HHS H1N1 VACCINE UPDATES**

##### **Robin Robinson, Ph.D., Director, Biomedical Advanced Research and Development Authority (BARDA), ASPR, HHS**

Dr. Robinson prefaced the panel discussion by saying that the vaccine strategy implemented in May had three prongs: vaccine development, vaccine manufacturing, and vaccine administration. He said that the panelists would discuss the different elements of the strategy, its successes, and its challenges.

##### **Linda Lambert, Ph.D., Chief, Respiratory Disease Branch, Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), HHS**

When Dr. Lambert updated the Board in June, the initial response to the H1N1 outbreak focused on the Food and Drug Administration (FDA) moving forward immediately with discussions with companies on licensure, developing reference viruses, HHS taking the lead with industry on the development of vaccines, and identifying clinical trials that the government should undertake. The goal for the companies was to generate the data to support the product from a regulatory standpoint. NIH then ended up with several protocols: 1) a study comparing one dose versus two doses across all age ranges; 2) studies to look at the co-administration of seasonal influenza vaccine with the novel 2009 H1N1 vaccine; 3) mixing vaccines and adjuvants from different companies; and 4) a study in pregnant women. The NIH turned to a network of contractors to do the studies. There are planned clinical trials in other populations for which NIH is developing protocols. These populations include HIV-positive individuals, HIV-positive pregnant women and children, and asthmatics. These studies are expected to use the Novartis H1N1 vaccine.

Dr. Robinson added that the goal of the vaccine strategy was to have enough vaccine for everyone in the country within six months. Right now, the federal government has purchased about 250 million doses of vaccine and 120 million doses of adjuvant. Large-scale manufacturing of the vaccines began in late June. In August the Department had fill-finished vaccine at a standard dose of 15 micrograms for adults and older children. Seasonal influenza and H1N1 vaccine manufacturing have been balanced such that both are moving along seamlessly.

In terms of the potency assays, the manufacturers had to determine how much vaccine they had in June, and the FDA made a decision based on the fact that other methods of determining antigen concentration could be used. The Department had to enlist fill-finish

manufacturers and coordinate with the vaccine manufacturers to open up the gates so that every amount of antigen could be moved into fill-finish and to sprayers, vials, and syringes. As far as distribution is concerned, Dr. Robinson said that CDC and McKesson are currently working to move vaccine from the manufacturer to the distribution sites.

Dr. Robinson left the Board with several key points: 1) the Department has to work hard moving forward to improve the potency assays and reagents; 2) seasonal flu is still coming; and 3) there will be efforts by the U.S. to assist other countries in learning how to make influenza vaccine from CDC's, NIH and BARDA's efforts.

**Anne Schuchat, M.D.**

RADM Schuchat gave an overview of the vaccine implementation effort. A centralized distribution contractor will be used for vaccination distribution and administration. The same contractor is being used for the childhood program, the vaccine for children, and the section 317 program. Vaccine will be coming from the five manufacturers and then ancillary supplies will come from up to four manufacturers through the central distribution mechanism. The vaccine for children program formed the basis of the current distribution plan. Many states have already completed their provider enrollment. The federal government has provided a model provider agreement that includes federal requirements but allows room for the states to add requirements according to their own needs. RADM Schuchat emphasized the point that financial barriers should not prevent someone from obtaining vaccine.

RADM Schuchat reconfirmed that state and locals are driving the distribution effort and the federal government is committed to being supportive through financial resources and technical assistance. The Department has some responsibilities for national monitoring, tracking, troubleshooting, and communication. The states have been asked to use the Countermeasures Response Administration reporting system. Beginning in October, the Department will have a national immunization survey module that will track immunization with the seasonal flu as well as H1N1 on a weekly basis. Vaccine effectiveness and lab testing sites have been enhanced to continue year-round to be able to look at exposures to seasonal flu and H1N1 vaccines separately.

RADM Schuchat concluded stating that a vaccination program like the current effort is large and perhaps unprecedented, which leaves room for misunderstandings. That is why the Department has been doing substantial outreach to familiarize the media with what to expect with the disease and the program.

**Gus Birkhead, M.D., M.P.H., Chair, National Vaccine Advisory Committee (NVAC)**

Dr. Birkhead updated the Board on the activities of NVAC. NVAC is primarily focusing on providing recommendations through the Assistant Secretary for Health at HHS on implementation issues. The Committee has also heavily focused on getting stakeholder input and coordinating the activities of all the advisory committees. Dr. Birkhead went on to outline the recommendations from NVAC. The Committee recommended that there be the development of a clear federal plan for monitoring safety for the 2009 H1N1 influenza vaccine. NVAC urged that there be development of methods to link vaccine

exposure information to adverse event outcome information on as large a population level as possible. NVAC recommended that there be the formation of an independent vaccine safety assessment committee to oversee data and provide an independent review of what data may be coming through. During their July meeting, NVAC recommended that the first dollar coverage for administration of H1N1 vaccine be the standard in both private and public health insurance programs, and that reimbursement rates for administration be adequate and in line with what Medicare would reimburse for. America's Health Insurance Plans (AHIP) has recommended that their members adopt and cover H1N1 vaccine administration.

During their August 2009 meeting, NVAC made recommendations concerning vaccine safety; specifically involving the assembly of information on background rates in the general population of anticipated adverse events following immunization. The second recommendation related to safety was to have organized drills or practice exercises for the federal government to work through how they would respond if a signal is detected around a vaccine. Finally, at the August meeting, NVAC recommended that there be a federal plan to coordinate communication regarding H1N1.

### **Discussion**

In response to a question from Ms. Carlin, RADM Schuchat replied that, ideally, the Department would be able to find a "sweet spot" where people who really need vaccine can get it and people who want vaccine, who are not in a priority group, do not lose the opportunity to get it. In terms of making certain that the below-ten age bracket receives the second inoculation, RADM Schuchat said that the trials are looking at a three-week interval. Monitoring will be easier in school settings and also in states with good immunization information systems. RADM Schuchat added that there was innovative work going on at some public and private areas in terms of other technologies, such as mobile phone reminders.

RADM Schuchat addressed concerns regarding calling the H1N1 vaccine "novel." The H1N1 vaccine is not experimental. It is made the same way that the seasonal flu vaccine is made. The need for serious outreach to parents and other members of the public is important to give them the opportunity to make good choices based on the available information. On the issue of risk and age, RADM Schuchat said that as age increases, risk decreases. There have been discussions about the social consequences of singling out university/college populations and how complex it would be for communication to focus on congregate young adults versus other young adults.

On the subject of antibody response in elderly populations, Dr. Lambert said that the average age in the study was 72 years. Studies were done in collaboration with industry that show that higher doses of vaccine increases the antibody response. RADM Schuchat summarized by saying that it was absolutely fundamental to the success of the vaccine program that the Department is credible, that trusted people are talking, and that common myths are identified and dealt with in ways that people are receptive to. Simple messages are needed to reach out broadly but there is also an important demographic that wants a lot of detailed information. Targeting is going to be crucial.

## **PANEL DISCUSSION SESSION II: HHS H1N1 ANTIVIRAL UPDATES**

### **Robin Robinson, Ph.D.**

Dr. Robinson gave a brief overview of the Department's goals for pandemic preparedness, the chronology of events, what the Department did and did not have entering the H1N1 events in April, and the progress of vaccine development. The national strategy for influenza set a goal of having enough antivirals for treatment of 25 percent of the population. Entering April 2009, the Department had 73.5 million treatment courses. As of May, 11 million treatment courses were deployed by the CDC Strategic National Stockpile (SNS) to the states. As of today, there are 36 million treatment courses in the states, with 50 million treatment courses in the federal stockpile.

Relative to antiviral development, BARDA has supported the development of IV-peramivir from BioCryst; a drug that can be given intravenously to individuals that are critically ill with influenza. BARDA has also worked with CDC and NIH to sponsor clinical studies of combination therapies.

### **Anthony Fiore, M.D., M.P.H., Medical Epidemiologist, Influenza Division, CDC, Captain, USPHS, HHS**

CAPT Fiore described the updates and revisions of the antiviral guidance documents that are on the Web from CDC, while also providing information about antiviral resistance, surveillance, and safety monitoring. The CDC's surveillance consists of isolates and clinical specimens that come through in collaboration with World Health Organization (WHO) labs. Going back to 2008, the seasonal influenza A isolates were sensitive to zanamivir. All of the H3N2 viruses tested are sensitive to the neuraminidase inhibitors, oseltamivir, and adamantanes. Over 99 percent of the H1N1s are susceptible to oseltamivir.

The second isolated instances of illness occurred when someone was on post-exposure chemoprophylaxis. CAPT Fiore presented a slide showing virus resistance: for zanamivir all of the viruses were susceptible, for oseltamivir seasonal H1s are resistant while other strains are susceptible, for adamantanes seasonal H1s are susceptible with resistance across the other viruses including 2009 H1N1 viruses.

Summarizing the CDC's most recent antiviral guidance, CAPT Fiore said that healthy people who develop an illness that looks like influenza, and those already recovering from influenza, do not need antiviral medications for treatment or chemoprophylaxis. CAPT Fiore emphasized empiric antiviral treatment of people who are particularly at risk or sick with influenza. Something that the CDC noticed was that people undergoing treatment still shed virus and need to continue taking isolation precautions.

A critical aspect of the guidance is to have practices that educate persons at higher risk for influenza complications about signs and symptoms and the need for early treatment. The major changes since the May guidance have been: the consideration of an alternative to post-exposure prophylaxis; and discussion with exposed people about what the signs and symptoms are, assurance that they can get close follow-up and that they can receive

early treatment if they develop suspected influenza. A waiting and watchful approach will save on chemoprophylaxis doses, probably be more efficient in the use of antivirals, and may even help the resistance issue. The idea of self-monitoring and early treatment as an alternative to chemoprophylaxis is probably the newest aspect in the most recent CDC antiviral guidance-posted on the Web.

In terms of adverse event monitoring, the FDA runs MedWatch, which is good at identifying new adverse events. Networks like the Drug Abuse Warning Network and the National Electronic Injury Surveillance System-Cooperative Adverse Event Project (NEISS-CADES) also look at illness-related adverse events.

**Debra Birnkrant, M.D., Director, Division of Antiviral Products, Office of Antimicrobial Products, Center for Drug Evaluation and Research, Food and Drug Administration (FDA), HHS**

Dr. Birnkrant briefly described the FDA's process for Emergency Use Authorizations (EUAs). She said that an EUA is the authorized use of an unapproved product or an unapproved use of an approved product during a declared emergency. The authorization ends with the emergency and EUAs do not replace clinical trials to support marketing. FDA encourages an early approach by government or any private entity that might request an EUA. The process of getting an EUA is, in brief: 1) An emergency is declared by the Department of Homeland Security (DHS), Department of Defense (DoD) or the Department of Health and Human Services; 2) the Secretary of HHS declares an emergency; 3) FDA then consults with the NIH and CDC to review the request and concludes that the product is reasonably believed to be effective, that the known and potential benefits outweigh the known and potential risks for proposed use, and there is no adequate approved available alternative. To date, the FDA has authorized EUAs for approved influenza antivirals in April 2009. Zanamivir for inhalation and oseltamivir from the SNS were authorized for emergency use.

Emergency Investigational New Drugs (IND) are on a much smaller scale than EUAs because they are basically for single patients. In this case the IND sponsor, usually a physician, contacts the pharmaceutical company to secure the product. The FDA is then notified by the sponsor and requests additional clinical information. The sponsor then submits an abbreviated protocol and data on the patient and whom they would like to use the product on. If the FDA allows the request, it provides an emergency IND number to allow the sponsor to ship the product to the physician.

Dr. Birnkrant briefly addressed the issue of Tamiflu oral suspension approved in the concentration of 12 milligrams per milliliter. Since U.S. physicians and parents are not used to giving dose in milligrams, there have been some medication errors (13 since 2000 according to the FDA's database). FDA is working with its partners at CDC and pharmaceutical company Hoffman La Roche to issue consistent messaging among the three parties. Specifically highlighted in this messaging is that dosing should be prescribed in milligrams according to the package insert and that the dosing dispenser packaged with the medication should be used to deliver the dose. Providers should also avoid prescribing Tamiflu in teaspoons.

## **Discussion**

CAPT Fiore added that a number of the 21 resistant isolates are still under investigation. Twenty-one is the number of isolates worldwide; there are just 10 in the U.S. There remains the specter of community transmission of resistant isolates. Tracking these isolates down is very difficult as there is no serologic test for infection with a resistant virus. Regarding inappropriate use of antivirals in chemoprophylaxis, CAPT Fiore said that the CDC has reached out with webinars, clinician calls, and a reposting of the antiviral guidance. CDC has also been reaching out to message the idea that most people who have no underlying medical conditions or are not pregnant are not going to require treatment. Another way of getting the message to clinicians is to work through professional societies. Dr. Quinlisk said that Iowa uses the Health Alert Network (HAN) to get information out. Part of the challenge is getting information to rural practitioners.

## **Public Comment**

CAPT Sawyer called for public comments and read a comment sent to the Board by Michael Murphy of New World Investor. Mr. Murphy asked why the FDA had not yet issued an EUA for intravenous peramivir. Dr. Birnkrant replied that she could not speak about specific products that are investigational. There is availability under the emergency IND process for a single patient with a serious illness and life-threatening disease to be able to obtain a parenteral antiviral. The EUA process is quite cumbersome, but if there are patients who require parenteral antivirals, they are available on a limited basis.

Dr. Erin Mullen from Rx Response asked for an update on private sector companies that have stockpiled antivirals that were at or near their expiration date. Dr. Birnkrant said that although there are provisions for products in the SNS to have their expiration date extended, definitive statements and actions have not been carried over to private stockpiles.

CAPT Reissman asked if there were pronounced strategies in and around the avoidance of exposure to and spread of the virus. CAPT Sosin said that this is an issue that HHS is taking seriously but there is no question that the vaccination activity is dwarfing the effort to prevent exposure.

Dr. Dan Fagbuyi from Children's National Medical Center and the American Academy of Pediatrics said that it was paramount to address issues of reimbursement. He also wanted the Board to consider issues with regard to bioterrorism.

Ms. Marlena Monroe from the public wondered if there was any way to push emergency use through and to get the message across concerning EUAs. Dr. Birnkrant reiterated her previous comment that the FDA has procedures to allow for access to drugs for serious and life-threatening diseases.

## **PANEL DISCUSSION SESSION III: HHS H1N1 DIAGNOSTIC UPDATES** **Michael Shaw, Ph.D., Associate Director for Laboratory Science, CDC, HHS**

Dr. Shaw's presentation focused on the type of diagnostics that CDC has used thus far, and how the diagnostics have changed along with the progress of the pandemic. CDC had done a lot in terms of preparation as part of pandemic preparedness. One emphasis was developing new tests and to get the capabilities out to laboratories in terms of reagents. CDC also had in place plans and mechanisms for improving surge capacity and rolling them out to the states. Putting proficiency testing in place was also critical. The first case of H1N1 confirmed in the laboratory at CDC was on April 15, and by April 29 CDC had reagent kits going out to laboratories across the U.S., and then internationally. The test is useful for surveillance purposes rather than for actual clinical testing.

Commercial laboratories have started to develop their own assays, but generally, the type of test that a patient is going to get in a clinical situation is a rapid influenza test. The disadvantage to these tests is that they do not subtype. With regard to testing for antiviral sensitivity, the gold standard is a functional assay looking at the drug inhibiting the neuraminidase enzyme. However, that is probably not something that is going to come out of the reference laboratories because it is too complex an assay, the equipment is expensive, and it requires highly trained personnel to use. As of now, there is no rapid test to tell subtype, or a quick test to tell antiviral resistance in a physician setting, small clinics, or emergency rooms. CDC would also like to see a type of test that could be adapted fairly easily to include a new marker for a new strain. The most glaring gap right now remains the detection of antiviral resistance.

**Sally Hojvat, M.Sc., Ph.D., Director, Division of Microbiology Devices, Office of In Vitro Diagnostic Device Evaluation and Safety, Center for Devices and Radiological Health, FDA, HHS**

Dr. Hojvat gave the Board an update on what the FDA was doing in terms of diagnostics for 2009 H1N1. The FDA promoted appropriate product development, kept an eye on assays, and developed a surveillance system. The labeling in the test kits is considered user education. Some of the variability seen with the rapid test is due to people not using them at the appropriate times on the appropriate individuals. Since the shortage of rapid tests in April, all of the companies (including the ancillary reagents for nucleic acid tests) have increased their inventories.

With regard to EUAs, the FDA has authorized a total of four different tests. Twenty-four companies are currently being helped through the EUA process. FDA has tried to bring into place EUAs on a test that would expand the possibilities. One of these tests was sent to the FDA by Quest working in conjunction with Focus Diagnostics and an EUA was given to them on July 23. That assay detects the influenza A H1N1 in multiple respiratory specimen types. FDA also received a request for EUA authorization from the Department of Defense which was issued on August 24. Dr. Hojvat noted that there are several EUAs in the pipeline that will be coming out over the next several weeks. FDA is trying to lessen the burden of the EUA process while still performing a thorough review. In terms of prioritization, FDA consults with colleagues on what they think the current need is. The big question right now is: Do you test or do you not test?

Dr. Hojvat noted that there was a certain consistency in the way that FDA looks at assays so they can be effectively compared. A lot of time is spent on interpretation of results and the limitations of assays are put into product inserts so there is transparency. FDA has enforcement tools for the reporting of adverse events and problems.

### **Discussion**

Dr. Shaw said that CDC has close relationships with several of the largest clinical laboratories around the country and there is an increasing interaction with veterinary schools because of the need to keep track of possible zoonotic infections. With regard to testing bias, Dr. Shaw did not know if anyone had looked at the issue in terms of the catchment area.

Dr. Cantrill suggested bifurcating the comments about labs and including aspects about timing and specimen collection. Dr. Pavia asked how the EUA process could be modified and how could more sophisticated platforms get out to the reference labs and to the university centers, to both unburden public health labs and widen the surveillance net. Dr. Hojvat said that in terms of prioritization FDA is trying to get ones in the different platforms. In regard to specimens, Dr. Hojvat said that FDA was asking for people to show that they can pick up between 20 positive specimens and 100 negatives. It has not been an extensive evaluation.

### **DISASTER MENTAL HEALTH SUBCOMMITTEE: BEHAVIORAL HEALTH CONSIDERATIONS FOR H1N1**

**Daniel Dodgen, Ph.D., Executive Director, Disaster Mental Health Subcommittee, Director, Office for At Risk Individuals, Behavioral Health, and Human Services Coordination, ASPR, HHS**

Dr. Dodgen thanked the Board for giving the Subcommittee the opportunity to speak and introduced the Chair of the Disaster Mental Health Subcommittee, Dr. Betty Pfefferbaum.

**Betty Pfefferbaum, M.D., J.D., Chair, Disaster Mental Health Subcommittee, NBSB, Director, Terrorism and Disaster Center, National Child Traumatic Stress Network, University of Oklahoma Health Sciences Center**

Dr. Pfefferbaum noted that the government response to pandemic influenza must contend with a number of psychosocial issues. These issues include coping with multiple uncertainties, making alternative arrangements for child care, loss of income, or adhering to community mitigation strategies. Unchecked, health anxiety can have serious repercussions, like a surge in demand for health services and complications in triaging. The Subcommittee is particularly concerned about those people who are receiving mental health and substance abuse services. With respect to mental health interventions, the Subcommittee proposed several recommendations: 1) a focus on interventions that address certainty, enable resilience and coping, and foster adaptive behavior; 2) careful consideration of the needs of vulnerable populations, keeping in mind that they live in heterogeneous settings; 3) inclusion of disaster mental health in all of the health activities at state and federal levels ;4) creation of a priority advisory team that can assist through ongoing activities and be kept apprised of the evolving situation; 5) conducting of field

tests that would examine health behavior and unmet needs; 6) facilitation of collaboration across government with state and local providers and with professional guilds. Dr. Pfefferbaum said that a critical piece of mental health intervention is the use of education and training.

**David Schonfeld, M.D., F.A.A.P., Member, Disaster Mental Health Subcommittee, NBSB, Thelma and Jack Rubinstein Professor of Pediatrics, Director, Division of Developmental and Behavioral Pediatrics, Director, National Center for School Crisis and Bereavement, Cincinnati Children's Hospital Medical Center**

Dr. Schonfeld briefly outlined some of the major recommendations related to training and education. There were 10 actionable recommendations from the Subcommittee: 1) prepare and make available disaster mental health educational materials suitable for all hazards; 2) begin work on disaster mental health educational materials that would be specific to a biologic natural disaster such as a pandemic; 3) disseminate handouts for mental health professionals about addressing the needs of individuals with preexisting mental health problems; 4) develop and disseminate guidance materials on bereavement support that is suitable for use by mental health professionals directly and/or via distribution to other care providers or to the general population; 5) disseminate guidelines for health care providers on providing psychological support to patients in the context of a disaster; 6) disseminate educational material for health care providers on bereavement support and patient education materials for use with families after a death has occurred; 7) disseminate guidelines for school professionals on how to provide psychological support to children in the context of a disaster with information on performing rapid and effective mental health triage and facilitating appropriate referrals; 8) disseminate educational material for school professionals on bereavement support as well as parent educational materials; 9) establish a working group to include representation of different guild associations in disaster mental health and other interested mental health professional organizations; 10) disseminate information for how families and other caregivers can support children who are grieving, as well as information for grieving adults to support friends relatives and themselves.

Members of the public should be optimally prepared to provide bereavement support to those who are grieving.

**Dr. Ann E. Norwood, M.D., Member, Disaster Mental Health Subcommittee, NBSB, Senior Associate, Center for Biosecurity, University of Pittsburgh Medical Center**

Dr. Norwood spoke about the importance of communication and the common goal of trying to get out accurate information in a timely fashion. The Subcommittee wanted to encourage several things going forward. First was the integration of behavioral health factors into health messaging. Mental health experts can play a valuable role in developing messages that are compassionate, respectful, understandable, and effective. Nonverbal communication is crucial given the low literacy of science in the U.S. The use of pictograms to enrich and simplify messaging is very important.

Dr. Norwood said that it was important to keep in mind that in the event of a deteriorating situation, different jurisdictions in the U.S. will react in different ways. The context in

which we live is significant in preparing messages. Also, it is imperative to maintain sensitivity to language and terminology. The Subcommittee wanted to discourage use of the term, “worried well.” In this particular situation, it would be more helpful to tell people what it is that they should do and why.

### **Discussion**

Dr. Quinlisk thanked the Subcommittee for its hard work and suggested that the Board discuss the Subcommittee's recommendations at the next Board meeting and perhaps vote on them. Dr. Quinlisk received a letter from Dr. Lurie indicating that the NBSB should use the members of the Subcommittee to act as an ad hoc body of experts that could be called upon during events of significance. Dr. Lurie also wanted the NBSB to convene the Subcommittee in the next fiscal year to assess the Department's progress in its efforts to better integrate behavioral health into emergency preparedness and response. Dr. Quinlisk then turned the meeting over to Dr. Grabenstein, who called for questions.

CAPT Aubrey Miller, Office of Counterterrorism and Emerging Threats, FDA, said that it was important to consider public health workers as a group that might need support as well. Dr. Schonfeld responded that it works well to incorporate that element into the educational material that is provided to providers.

Dr. James wanted to see the Subcommittee come up with some opinion, recommendation, or input on the use of algorithms and their potential mental health implications. Dr. Schonfeld said that with algorithms, one really needs to know what is being recommended. After having a clear sense of what to recommend, the next step is to communicate in a format that health care providers can follow. Dr. James said that his concern was that as different protocols are developed, they may not be well-enough informed by mental health and behavioral input in terms of defining what is trying to be achieved. Dr. Pfefferbaum added that in addition to having the effect of decreasing stress and load on the health service systems, these kinds of materials have an immense educational potential in terms of encouraging individuals and families to take responsibility for their health care.

Ms. Carlin mentioned the problem of confusing messages and controlling anxiety among the public, i.e., a recent CBS news headline that read, “Seasonal Flu Shot Raises H1N1 Risk.” Dr. Dodgen replied that there is a lot of information at the Department and Board's disposal, and that a response can be carefully crafted to address these informational issues. Dr. Dodgen underscored the basic message of communication and of having clear and actionable information that people can utilize to help them manage their anxiety.

Dr. Schonfeld added that to the degree that individual responses have been discussed, the Board needs to think about how groups of people or communities respond. One of the things that the Subcommittee discussed was how systems and governments respond in disaster situations. Health care providers and health care system leaders should be thinking about the impact of impending disasters on their decision making.

Dr. Grabenstein asked if there was anything in existing resources that ought to get blended into HHS or federal government action in the next few weeks. Dr. Dodgen pointed to the guidance that came out of the White House Office of Faith Based and Community Neighborhood Partnerships, as well as the mental health resources on the CDC and Substance Abuse and Mental Health Services Administration (SAMHSA) Web sites. Dr. Grabenstein asked Dr. Dodgen to provide the Board with the 10 best sites so that they can make a recommendation and get the information out to the public in an easily accessible format.

### **Public Comment**

Dr. Tony Ng, current President of the American Association of Emergency Psychiatry, had three comments for the Board: 1) everyone has a different interpretation of where emergency is and in terms of the flu, people need better guidance as to what defines a trip to the ER; 2) not only is crafting the right message important, but delivery of the message is important; 3) unlike the situation with Severe Acute Respiratory Syndrome (SARS), there is now wide Internet availability—what is being done to communicate in real time.

Chip Shriver from the Command Surgeon's Office, NORAD USNORTHCOM, suggested that as the Board approaches the issue of information and information management, they may want to take a look at a study done by the Defense Threat Reduction Agency a few years ago about a novel biological agent in a real-world scenario. There is science out there that can be recruited toward informing the information packaging and drilling-down the best information to the lowest common denominator.

### **WRAP UP AND FUTURE ACTIVITIES OF THE BOARD**

CAPT Sawyer announced that the next meeting of the Board would be a public teleconference on October 14 from 12:00 p.m. to 2:00 p.m. EDT.

Dr. Grabenstein thanked the NBSB staff and recognized them for their hard work.

CAPT Sawyer received confirmation from the Board that they would be taking up the recommendations from the Disaster Mental Health Subcommittee for consideration at a future Board meeting.

CAPT Sawyer adjourned the meeting at 4:21 p.m.

Enclosures – Public comments e-mails and formal letter.



From: Michael Murphy [techperson@gmail.com]  
Date: Thursday 9/24/2009 6:05 p.m.  
Subject: NBSB Meeting 9/25/09

I have a question for Leigh Sawyer and Patricia Quinlisk, to be put to Debra Birnkrant:

Since the FDA determined intravenous peramivir to be safe and effective by granting an E-IND in June, and since that process is so cumbersome at getting the drug to the ICU that less than 10 patients have been treated, why has it taken so long for the FDA to issue an Emergency Use Authorization and get this drug on hospital shelves? Hundreds of patients including dozens of children have suffocated to death without timely access to it.

Michael Murphy, CFA  
New World Investor