



**National Vaccine Advisory Committee (NVAC)
February 5–6, 2009, Meeting Minutes**

Meeting Overview

The Committee finalized the recommendations for its *2008 State of the Program Report*. The Vaccine Safety Working Group (VSWG) described its efforts to gather public input on the draft research agenda of the Centers for Disease Control and Prevention's (CDC's) Immunization Safety Office (ISO). Representatives from the National Vaccine Program Office (NVPO) and CDC provided preliminary estimates of the financial implications of NVAC's recommendations on vaccine financing of immunizations for children and adolescents. The Committee received an update from its Adult Immunization Working Group.

A CDC representative described a proposal to reconfigure the pediatric vaccine stockpile to increase flexibility and decrease the risk of waste; the Committee will consider establishing a working group on vaccine stockpiling. The Committee learned about the emerging concept of pre-pandemic influenza vaccination and efforts by the National Biodefense Science Board (NBSB) to address the related policy issues. The Committee discussed the role of the Federal government in stimulating innovation in vaccine development. The first day of the meeting closed with updates from liaisons and ex officio members on their organizations' efforts.

Representatives from NVPO and CDC briefed the Committee on the status of the National Vaccine Plan, presenting initial results of public and stakeholder comment processes and outlining plans to hold additional community engagement meetings for further input. The second day of the NVAC meeting was devoted to gathering stakeholder input on the Plan through breakout sessions organized by goal and by stakeholder sector. NVAC members led the discussions and summarized the feedback.

Committee Members in Attendance

Guthrie S. Birkhead, M.D., M.P.H., Chair
Jon R. Almquist, M.D.
Richard D. Clover, M.D.
Cornelia L. Dekker, M.D.
Mark Feinberg, M.D.
Jaime Fergie, M.D., F.A.A.P.
Lance K. Gordon, Ph.D.
Sharon G. Humiston, M.D., M.P.H.
Lisa Jackson, M.D., M.P.H.
Charles Lovell Jr., M.D., F.A.C.P.
James O. Mason, M.D., Dr.P.H.
Marie McCormick, M.D., Sc.D.
Christine Nevin-Woods, D.O., M.P.H.
Trish Parnell
Andrew T. Pavia, M.D.

Committee Members Absent

Laura E. Riley, M.D.

Executive Secretary

Bruce G. Gellin, M.D., M.P.H., Deputy Assistant Secretary for Health (DASH) and Director, National Vaccine Program Office (NVPO)

Deputy Assistant Secretary for Health

Donald Wright, M.D., M.P.H., Principal Deputy Assistant Secretary for Health (P-DASH)

NVAC Ex Officio Members

Norman Baylor, Ph.D., Food and Drug Administration (FDA)

Limone Collins, M.D., (for COL Renata Engler), Department of Defense (DoD)

George Curlin, M.D., National Institutes of Health (NIH)

Geoffrey Evans, M.D., Health Resources and Services Administration (HRSA)

Anne Schuchat, M.D., Rear Admiral, U.S. Public Health Service (USPHS), CDC

Ronald O. Valdiserri, M.D., M.P.H., Department of Veterans Affairs (VA)

NVAC Liaison Representatives

Magdalena Castro-Lewis, Advisory Commission on Childhood Vaccines

Margaret McCluskey, R.N., M.P.H., (for Neal Brandes) U.S. Agency for International Development

Wayne Rawlins, M.D., M.B.A., America's Health Insurance Plans

Ciro Sumaya, M.D. (for Dale Morse), Advisory Committee on Immunization Practice

David Salisbury, C.B., F.R.C.P., F.R.C.P.C.H., F.F.P.H.M., United Kingdom Department of Health

Invited Speakers

Roger Bernier, Ph.D., M.P.H., CDC

Janesse Brewer, Keystone Center

Anthony Fiore, M.D., CAPT, USPHS, CDC

Jeanne Ringel, Ph.D., RAND Corporation

Robin Robinson, Ph.D., DASH, and Director, Biomedical Advanced Research and Development

Authority (BARDA), Office of the Assistant Secretary for Preparedness and Response (ASPR)

Lance Rodewald, M.D., CDC

Abby Shefer, M.D., CAPT, USPHS, CDC

Angela Shen, CDR, USPHS, NVPO

Raymond A. Strikas, M.D., CAPT, USPHS, NVPO

Day 1—February 5, 2009

Opening Remarks, Introduction, and Report of the Chair—Guthrie S. Birkhead, M.D., M.P.H.

Dr. Birkhead welcomed the participants and invited the Committee members to introduce themselves. The minutes of the September 2008 meeting were approved by the Committee with one change.

Action Item

Minutes of the September 2008 NVAC meeting were accepted with the following change:

On page 11, change, “Dr. Abramson said that vaccine administration rates at the State level are at least equal to those of Medicare and are paid according to a clear, consistent methodology,” to “Dr. Abramson said that *AAP hopes* vaccine administration rates at the State level are at least equal to those of Medicare and *will be* paid according to a clear, consistent methodology” (italics added).

Dr. Birkhead noted that NVAC would begin tracking the results of its recommendations and action items using a grid that summarizes the status of follow-up actions for each. During NVAC meetings, as recommendations and action items are proposed, the Committee should also identify an individual responsible for following up as needed for that item.

The following NVAC members will rotate off the Committee following this meeting: Jaime Fergie, M.D., F.A.A.P.; Lance K. Gordon, Ph.D.; Sharon G. Humiston, M.D., M.P.H.; and Charles Lovell Jr., M.D., F.A.C.P. Dr. Birkhead thanked them for their valuable input and years of service to the Committee. Although their terms have ended, Cornelia L. Dekker, M.D., and Andrew T. Pavia, M.D. have agreed to a one-year reappointment so that membership terms are more staggered. Calvin Johnson, M.D., resigned from the Committee this past fall because he left his position as Pennsylvania’s Secretary of Health. As a result, NVAC will have five vacancies to fill. NVAC Executive Secretary Bruce G. Gellin, M.D., M.P.H., added that his office has received nominations and also considers previously submitted nomination packages. Nomination packages are reviewed by the Institute of Medicine (IOM), and then information on qualified nominees is submitted to the White House liaison and the Assistant Secretary for Health (ASH) for consideration and selection. NVPO is working closely with all parties to ensure a smooth transition for new members.

State of the Program Report

Dr. Birkhead said NVAC’s charge includes reporting annually on the most important areas of government and nongovernmental cooperation in implementing the National Vaccine Program. At its previous meeting, NVAC decided to combine a 2008 annual report with a document that would provide guidance for the transition to a new administration. Dr. Birkhead provided a draft for consideration by the Committee, with recommendations gleaned from discussions during the past several meetings. He asked for input, particularly on issues or components that are either insufficient or missing from the report.

Discussion

Dr. Lovell emphasized the importance of keeping the website of the National Vaccine Program up to date. He pointed to other organizations’ efforts to create living, web-based standards that are updated as sufficient new evidence becomes available to justify revising the standards. Dr. Birkhead agreed and suggested that the NVAC evaluation currently underway might come to the same conclusion. Dr. David Salisbury recommended looking at the website of the World Health Organization’s (WHO’s) Strategic Advisory Group of Experts (SAGE) on Immunization, which is updated continuously.

[<http://www.who.int/immunization/sage/en/>] It identifies the status of the group’s recommendations and actions, as well as who is responsible for each.

Christine Nevin-Woods, D.O., M.P.H., suggested that the report address the “everyday” issues related to vaccine financing that practicing physicians routinely face, not just for new vaccines but for all vaccines, such as vaccinating underinsured patients and delivering vaccines in the patient’s medical home. Dr. Birkhead agreed those issues should be incorporated into the report, noting that financing should address not just the cost of the vaccine but also the administrative costs. Dr. Pavia said NVAC needs a mechanism to enable direct action on its recommendations so that they reach across and perhaps even beyond the Federal public health agencies. He said financing must be addressed within that larger sphere of influence.

Jon R. Almquist, M.D., said the report does not mention the impact of vaccine shortages on the public’s trust in the vaccine system in the United States. Dr. Birkhead said the issue is mentioned in an appendix but should be moved into the main text of the report.

Much discussion revolved around the proposed recommendations to place Health and Human Services’ (HHS) public health agencies under the administrative direction of the (ASH) and to ensure that the National Vaccine Program, under the direction and authority of the ASH, has the authority and resources necessary to coordinate and direct the vaccine-related efforts of the public health agencies. James O. Mason, M.D., Dr.P.H., described the organizational history of the Department and NVPO, noting that until the early 1990s, all of the public health agencies reported to the ASH, who worked closely with the Secretary in such matters as developing budgets for the agencies and testifying before Congress. During this time, the NVPO was established through Congressional legislation and the ASH was given direct authority over it. But, the public health agencies began reporting directly to the Secretary by the mid-90s. He noted that the ASH has little authority now and no clear link to the public health agencies and so does not adequately fulfill the role of coordinating efforts around the National Vaccine Program.

RADM Anne Schuchat, M.D., suggested focusing on the goals of the vaccine enterprise and letting others determine the best way to overcome barriers to meeting those goals, including organizational restructuring, and Dr. Humiston agreed. Dr. Birkhead said the statute states that the National Vaccine Program should direct vaccine-related efforts across the public health agencies, but that direction is not happening under the current structure. He noted that it is not clear who has the authority to enact the recommendation for reorganization if it were approved by the Secretary.

Ciro Sumaya, M.D., added that the main concern is that the National Vaccine Program have the authority and dollars it needs to reach its goals. Dr. Birkhead responded that the statute calls for providing necessary resources to support the National Vaccine Program. Norman Baylor, Ph.D., asked for more clarification of the intent of the recommendations, especially if the goal is to gain the needed support to carry out the mission identified in existing legislation.

Marie McCormick, M.D., Sc.D., suggested that the recommendation to better identify vaccine-related topics under consideration by other Federal advisory bodies should include a mechanism for bringing together those Federal bodies as appropriate.

Dr. Humiston pointed out that NVAC already serves as a mechanism to gather input from stakeholders, as recommended in the report, and objected to adding more rules to govern the process.

Dr. Gellin hoped to gain the consensus of the Committee on the recommendations by the end of the meeting, if not the exact wording. He suggested emphasizing the need for the National Vaccine Program to have the resources and authority to carry out its statutory mission. Dr. Gordon pointed out that so much has changed since the original legislation that simply reiterating the original legislation would not be sufficient. Dr. Birkhead agreed to revise the recommendations for review by the Committee on Friday,

February 6. He welcomed additional comments on the report, which would be finalized before the June 2009 meeting.

Welcome of the Principle Deputy Assistant Secretary for Health—Donald Wright, M.D., M.P.H.

Dr. Wright welcomed the members. He said that Rear Admiral Steven K. Galson, M.D., M.P.H., the acting Surgeon General, is also the acting ASH, and along with Dr. Wright (P-DASH), the agency is seeking to provide consistent leadership during the transition to a new administration. Dr. Wright assured the Committee that NVAC will continue to be critical to the agency's success as it seeks input and recommendations on all vaccine issues.

Dr. Wright said that he hoped the RAND Corporation's evaluation of NVAC would address the Committee's concern that its recommendations do not lead to actions. He added that the issues on NVAC's agenda are central concerns of the agency, particularly vaccine safety. HHS is committed to enhancing vaccine safety and public confidence in vaccines, Dr. Wright said, and he looks forward to the results of the VSWG's review of the ISO's scientific research agenda. Dr. Wright believes vaccine safety will be a key priority of HHS for many years.

Dr. Wright commended NVAC for taking on vaccine finance issues. He welcomes the additional advice and recommendations of NVAC as it looks further at the financial implications of its recommendations. He also noted that everyone agrees the National Vaccine Plan must be updated, and he looks forward to the input from NVAC and others on the draft plan.

Dr. Wright encouraged NVAC members to submit comments on the action plan published in January 2009 to reduce healthcare-associated infections, an effort that he spearheaded. The plan includes 5-year targets developed with input from stakeholders in academia, subject matter experts, and representatives of Federal agencies.

Dr. Wright thanked all the members for sharing their expertise with HHS and recognized the tremendous commitment of the four outgoing members of the Committee, Drs. Fergie, Gordon, Humiston, and Lovell. He thanked Drs. Dekker and Pavia for agreeing to extend their terms.

National Vaccine Plan—Raymond A. Strikas, M.D., CAPT, USPHS

CAPT Strikas said the revised draft of the strategic National Vaccine Plan was released in November 2008, outlining five goals, the last of which is new since the 1994 version:

1. Develop new and improved vaccines.
2. Enhance the safety of vaccines and vaccination practices.
3. Support informed vaccine decision-making by the public, providers, and policy-makers.
4. Ensure a stable supply of recommended vaccines and achieve better use of existing vaccines to prevent disease, disability, and death in the United States.
5. Increase global prevention of death and disease through safe and effective vaccination.

The draft includes several appendices that describe the anticipated outcomes of the update to the 1994 plan, IOM committee recommendations for the plan, key stakeholders, roles and responsibilities of HHS and other Federal agencies, and other relevant Federal strategic plans. NVPO requested comments on priorities, goals, objectives, strategies, and indicators for the plan for a 10-year period, as well as comments on stakeholders' roles in the plan. NVPO will accept comments through March 31, 2009.

To gather input on the plan, an IOM expert committee is seeking comments from Federal partners and holding workshops across the country with national expert stakeholders on each of the plan's five goals. IOM will provide a final report to NVPO in November 2009.

In December 2008, IOM convened a stakeholder meeting in Irvine, CA, around goal 1 (research), with panels addressing innovation, financing, public priorities, and regulation of vaccine research. Dr. Gordon attended the meeting and summarized his perceptions of the meeting and some key points. While the quality of the presentations was excellent, said Dr. Gordon, the panel format resulted in little audience participation in the discussions. The manufacturers led a discussion which called for a more systematic approach to vaccine development but failed to suggest how. Concerns were raised about the lack of communication among those involved in development because of the desire to protect trade secrets. Dr. Gordon said two venture capitalists indicated they would not invest in vaccine development at all, and he called for better understanding of that stance. The issue of public financing came up several times, along with recognition that the public has a role in identifying its research priorities and needs. The goal of regulatory harmonization is waning in favor of improving communication and information sharing, said Dr. Gordon. Participants said that the perceived move toward zero-tolerance for risk is laudable but affects the development of new products. Dr. Gordon said large pharmaceutical companies were well represented at the meeting, but the entrepreneurial community was not.

CAPT Strikas said the February 2, 2009 IOM stakeholder meeting on goal 3 (communication) resulted in a spirited discussion. Despite the wide range of issues covered by the panel presentations, every discussion came back to vaccine safety issues, he said.

In addition to the IOM stakeholders' meetings and three planned public engagement meetings, NVAC members will lead stakeholders in small group discussions about the National Vaccine Plan on Friday, February 6, broken out by goal and sector.

Public Engagement in Developing the National Vaccine Plan

Roger Bernier, Ph.D., M.P.H., summarized the plan to obtain citizen input on the National Vaccine Plan through three public meetings around the country to inform policy-making efforts. Dr. Bernier said he was encouraged by the efforts of President Obama on his first day in office toward making government more participatory and transparent. Consulting with citizens provides information on the public values that should be part of decision-making. Engaging the public results in smarter decisions that are better aligned with public values, more feasible, and more relevant. Products that incorporate the results of public input instill a greater sense of public ownership and possibly support, provide a sense of empowerment among those who participated, and create more trust and social capital, said Dr. Bernier.

The draft National Vaccine Plan has five goals, 36 objectives, and over 100 strategies. The planned public engagement meetings aim to define, from the public's perspective, the ends or goals most important to pursue or those that deserve the highest priority in the plan. Dr. Bernier identified 12 subgoals into which the 36 objectives were classified:

- Improve tools for making vaccines
- Increase vaccination of adults
- Increase vaccination of adolescents
- Make vaccines affordable and available to everyone
- Maintain a high rate of vaccination of children
- Develop new vaccines
- Ensure sufficient supply of vaccine

- Improve vaccine safety
- Ensure compensation for those injured by vaccines
- Help other countries reduce diseases through vaccination
- Improve systems to monitor diseases and vaccination
- Improve communication of information about vaccines

Dr. Bernier anticipated that the public engagement products would yield four products:

- List of what citizens value related to vaccines
- Set of decision criteria for prioritization of values
- Weights for the decision criteria
- Recommendations on the highest priority subgoals on the basis of the weighted criteria

Currently three or four one-day meetings (i.e., “deliberation days”) are planned at locations around the country in March and April. Each will include more than 100 citizens representative of the area by age, race, and sex. Information will be offered in an unbiased presentation of the plan by neutral facilitators. Input from stakeholders will be gathered separately. The model for the meetings has been proven to be effective in gathering input on allocation of limited supplies of vaccine and adopting community control measures for pandemic influenza. Dr. Bernier invited NVAC members to participate in the meetings. He outlined the recognized principles of public engagement, which have been considered in the planning for this process.

Discussion

Dr. Mason questioned how resources would be obtained to pursue the goals of the plan and who would be accountable for meeting the goals. CAPT Strikas said the stakeholder and public engagement meetings will help inform decision-making about the plan’s top priorities. The priorities will be incorporated into the final strategic plan, which will be presented to HHS leadership along with an assessment of existing and required resources. Dr. Gellin emphasized that the plan seeks to strike a balance between achievable goals and aspirational goals. The plan currently represents Federal agencies’ thinking about the vaccine enterprise; a national plan requires input from non-Federal entities. Dr. Gellin asked for input on how to compel non-Federal entities to play a role in achieving the plan’s goals and hold them accountable for that role. He added that coordination and direction—as discussed earlier in relation to the National Vaccine Program—are needed to ensure the completed plan is put into place effectively.

In response to a question about weighting criteria for determining values, Dr. Bernier said the process is not scientific but is effective at determining which values are most strongly and widely held.

Alina Baciu of IOM said the expert committee welcomes input from NVAC or others on what its role should be in coordinating the implementation of the priorities identified in the National Vaccine Plan.

Action Item

NVAC will draft a letter to the IOM which will include the recommendations contained in the State of the Program Report especially the recommendation that the National Vaccine Program be given the authority and resources to coordinate vaccine efforts at the Federal level and with non-governmental partners.

Dr. Salisbury wondered whether gathering input from relatively small groups of self-selected public participants would actually change the priorities identified in the plan or just change how HHS communicates its priorities. CAPT Strikas responded that input would inform the priorities; there is no

guarantee that public input will be reflected in the plan, only that it will be seriously considered. He added that HHS used this approach successfully in developing guidance for communities about pandemic influenza, despite the fact that input did not come from a randomly selected or statistically representative sample of citizens.

NVAC Evaluation Status Report—Jeanne Ringel, Ph.D., RAND Corporation

Dr. Ringel explained that the RAND Corporation was commissioned to evaluate the impact of recommendations made by NVAC. Once RAND identifies the factors associated with implementation of recommendations, it will offer strategies to increase NVAC's effectiveness in shaping vaccine policy.

To date, RAND has developed a conceptual framework for the vaccine enterprise, and Dr. Ringel noted that NVAC recommendations touch on all aspects of the framework. The company is evaluating all NVAC recommendations made since 1998 and has categorized them broadly by topic and target agency/division. It is analyzing, for example, how well the topics addressed align with priorities identified in the National Vaccine Plan.

Dr. Ringel explained that RAND staff will interview current and former NVAC members, as well as HHS staff and other stakeholders, for more qualitative information about the entire NVAC process. The evaluation will delve further into the implementation status of the nearly 250 recommendations NVAC has made since 1998, and Dr. Ringel asked for input on how to determine the extent of implementation at different levels of government or in different programs. She also asked for input on whom to interview, facilitators/barriers to implementation of recommendations, the role of NVAC in promoting recommendations, and improving the effectiveness of NVAC recommendations. Dr. Ringel said RAND aims to provide NVAC with a report and recommendations in June 2009.

Discussion

Dr. Pavia suggested evaluating topic selection and assessing the quality of recommendations made. Dr. Ringel said evaluating the quality would not be possible within the given timeframe, but further analysis and characterization of the NVAC recommendations may provide some insight. She added that the evaluation will assess steps taken by NVAC and the NVPO to implement recommendations and analyze the various dissemination strategies.

Vaccine Safety Working Group—Andrew T. Pavia, M.D., Chair

Introduction

Dr. Pavia reiterated that the first charge of the Working Group is to undertake scientific review of the draft ISO research agenda. One major component of that effort has been to gather input on the values of the general public to inform the research priorities through a series of public engagement meetings across the country.

Public Engagement Activities—Janesse Brewer, Keystone Center

Ms. Brewer explained her organization's efforts so far in the community engagement process, emphasizing that the organization is still analyzing the results of the meetings, and the information presented represents preliminary findings. The process sought to get a sampling of views from the general public, recognizing that other steps will be taken to gather input from stakeholders, i.e., people involved in vaccine-related issues on a daily basis.

A steering committee of NVAC representatives and representatives from HHS, CDC, ISO, the Association of State and Territorial Health Officials (ASTHO), and the National Association of County and City Health Officials (NACCHO) advised Keystone throughout the planning process. Birmingham and Indianapolis were chosen as meeting sites because they are metropolitan areas in different parts of the

country with active State and local health departments and average rates of vaccination. Ashland was selected because it has a 25-percent exemption rate for vaccination, and the steering committee agreed that it was important to get input from a community in which resistance to vaccination is quite high.

The community meetings had good participation rates, ranging from 46 to 70 people per meeting. Each meeting was held from 9 a.m. to 3 p.m. on a Saturday, and each participant was offered a \$50 stipend to offset the costs of childcare and travel (although not all accepted the stipend). Each meeting began with a brief overview on the project that described how the input would be used and emphasized that NVAC is not required to address all of the input in its policy recommendations. A non-Federal government expert gave a brief overview on vaccine safety, and a member of the ISO gave an overview of the draft research agenda.

Representatives from Keystone, ASTHO, ISO, and HHS then facilitated small group discussions to identify general concerns and to discuss five scenarios intended to guide participants in wrestling with tradeoffs and other complex issues of research. After the first meeting in Birmingham, Keystone added an allocation exercise in which participants were each asked to allocate limited resources to specific research topics. Discussion was held with the entire group, and participants took part in anonymous, real-time, electronic polling to gauge their feelings on additional issues.

Ms. Brewer emphasized that the community meetings did not constitute a statistically verifiable, random sample of views representing the entire U.S. population. They also were not designed to promote any particular point of view. However, the results do bring forth a sampling of concerns about vaccines and vaccine safety from three different areas. The meetings were intended to encourage dialogue and increase understanding of community concerns and views, particularly the values that underpin those views.

[Note: A full summary and webcast of the February 4th NVAC Vaccine Safety Working Group meeting provides additional details. (to be posted at <http://www.hhs.gov/nvpo/nvac/vaccinesafety.html>).]

In small group discussion issues commonly raised included specific diseases and vaccines, concerns about the safety of specific ingredients, and the issue of mandatory vaccination. Some participants raised concerns about the amount, timing, and combination of vaccines administered; the long- and short-term side effects; and potential interactions with other conditions or exposures. Some participants wondered whether a vaccine can cause the disease it targets. In terms of data, research, and the vaccination system, participants in all three communities asked why there are no studies comparing vaccinated and unvaccinated populations. Many participants wondered whether the risks and benefits of vaccinations were the same across all populations and, in particular, whether some populations are more susceptible to risks.

Ms. Brewer presented analysis of all three communities' responses to various scenarios in which participants were asked to address topics such as limited resources, severity of side effects, and priority populations for research. Most participants indicated, for example, far higher concern about rare but severe side effects than frequent but mild side effects. Many felt more strongly that research on effects on children should be a higher priority than effects on adults. They found it difficult to prioritize research among special populations; many felt the United States should find a way to fund research on all the special populations of concern. Most felt that additional studies on issues of concern to the public should be conducted even when scientists did not share those concerns, because parents may have important insights that are overlooked by scientists. All the communities agreed that more study of autism is needed.

Ms. Brewer identified some lessons learned about the limitations of the process; however, the results of a post-meeting survey of participants indicated that most found the discussions were fair, effectively

identified participants' values, and addressed all the important topics. Looking ahead to the Working Group's second charge of assessing the overall Federal vaccine safety system, Ms. Brewer highlighted the importance of the following:

- Addressing concerns about complete and accurate reporting
- Increasing transparency
- Ensuring credibility and accountability in science
- Identifying sources of accurate and credible information for consumers
- Evaluating access to health care and vaccinations
- Ensuring the vaccination system is well run, appropriately funded, and instills confidence

Ms. Brewer concluded by summarizing the values identified from the meetings:

- Children are special and universally valued.
- Choice is important in health care.
- Informed consent relies on good information about risks and benefits.
- Social responsibility is a key reason for vaccination.
- Transparency is very important for government activities.
- Independent and trusted science is important to vaccine safety research.
- Parental instinct and knowledge is credible and should be considered in addition to scientific and medical knowledge.
- All lives are important and deserving of care and attention.

Ms. Brewer went on to describe the planned approach to gathering stakeholder input on the draft research agenda. Initial planning discussions spurred by Keystone staff revealed broad agreement about the need for a robust scientific agenda and the desire for meaningful, deliberative discussion that is inclusive, transparent, and focused and for sufficient time to fully evaluate the agenda and the broader vaccine system issues.

Ms. Brewer said the stakeholders' meeting will be held in Washington, DC, on March 16. Stakeholders will identify themselves and register for the meeting (i.e., participants will not be selected or invited). The proposed objectives are lofty, said Ms. Brewer:

- Further identify gaps in the draft ISO research agenda
- Develop prioritization criteria for further consideration
- Assign weights to the prioritization criteria
- Identify other stakeholder issues for future consideration

In preparation for the stakeholder meeting, a writing group will prepare draft materials for participants to consider in advance of the meeting.

Discussion

Dr. Humiston asked how the findings of the meetings would be disseminated. Ms. Brewer said a final report would be written after the stakeholder meeting and presentations made to the VSWG and NVAC. Dr. Pavia suggested that NVAC consider how to disseminate the findings to clinicians beyond the public health literature. Dr. Lovell pointed out that the findings from the community engagement meetings may have limited national application, because they are not based on a scientifically valid approach. Dr. Fergie echoed those comments, asking whether strong conclusions could be made on the basis of such a small

sample. Others raised questions about whether the meetings had sufficient representation of racial and ethnic minorities.

Dan Salmon, Ph.D., M.P.H., reiterated that the goal was to gather (quickly, and with limited resources) a sampling of the public's values to inform the Working Group's evaluation of the ISO Scientific Agenda. He said the consistency across all three communities gave him confidence that the findings were valid. Dr. Bernier noted that the meetings were not research efforts but rather public health efforts to better inform decision-making. He added that subject matter experts routinely provide advice, and their input is not discounted because they do not represent a random or scientifically representative sampling of the community.

Dr. Salmon noted that NVPO staff has discussed making the community engagement process an ongoing effort. Such continuation might offer an opportunity to include more subgroups. Dr. Salisbury described the various approaches to information gathering taken in the United Kingdom and said qualitative research has value and utility.

In response to a question about the selection of participants, Ms. Brewer said that Keystone began recruitment by asking local health officials in the selected communities to identify individuals and groups to contact. Workgroup members also made calls to identify contacts. Keystone sent information about the meetings via e-mail, mail, phone, flyers, and radio and newspaper advertising. The goal was to bring together about 50–75 people who represented a cross-section of the community. Groups contacted included, for example, State and local parent-teacher organizations, pediatricians, preschools and childcare centers, home school networks, parent support groups, alternative medicine providers, and faith-based organizations.

Dr. Pavia thanked NVAC Vaccine Safety Working Group members Dr. Mason, Tawny Buck, and Trish Parnell for participating in the steering committee for the public engagement meetings and Dr. Salmon and Kirsten Vannice for their tireless efforts.

Vaccine Safety Working Group Update—Andrew T. Pavia, M.D.

Dr. Pavia said that dividing the Working Group's work into two separate charges has proven more difficult than anticipated, as the evaluation of the ISO research agenda overlaps with the assessment of the Federal vaccine system. He described some of the emerging issues and potential recommendations that the Working Group is considering. The group met on February 4, 2009, to hear the preliminary results from the public engagement process. Its goal is to present a draft report for public comment by April and to present a report with recommendations to NVAC in June 2009.

Dr. Pavia described some of the overarching issues the VSWG is finding as it evaluates the research agenda. First, it is difficult to consider the ISO agenda in isolation. It is also difficult to balance scientific priorities with public concerns and priorities. The agenda should better clarify its emphasis on prevention and, when prevention is not possible, amelioration of vaccine adverse events that lead to preventive strategies short of pulling a vaccine off the market. The three topical categories of the agenda (Vaccines and Vaccination Practices, Special Populations, and Clinical Outcomes) would benefit from greater specificity and hypothesis generation, since each item is a broad topic.

The Working Group may suggest adding topics to the agenda on risk communication research and retrospective analyses of lessons learned to evaluate the decision-making processes, successes, and failures of past vaccine safety efforts. More consideration is needed about vaccine safety in the context of pandemic and biological preparedness efforts. The biological mechanisms of adverse events should be

considered. Dr. Pavia said researchers will need to break down the silos that separate epidemiologic research from other scientific research.

In evaluating capacity issues, the Working Group will likely offer some suggestions to bolster the effectiveness of the Vaccine Adverse Events Reporting System (VAERS) and facilitate data mining of both VAERS and the Vaccine Safety Datalink Project. More detail is needed on laboratory capacity for research and potential collaborations to improve that capacity.

Immunology is emerging as an important area of research that needs to be further fleshed out and should incorporate surveillance research, Dr. Pavia said. Genomics is an area of great interest, and the Working Group is considering how to focus genomics research, who should partner in such efforts, and what should be studied.

In the research agenda, Dr. Pavia said, scientific priorities align with public concerns around the issue of studying specific populations thought to be at higher risk from vaccination, e.g., children with mitochondrial disease, metabolic dysfunction, or other metabolic disease. The Working Group is considering how to address research questions associated with thimerosal, and may propose an externally sponsored re-analysis of Thompson et al.'s 2007 findings regarding neurodevelopmental outcomes.

Dr. Pavia said the area with the greatest potential for controversy is also at the forefront of public concerns: autism. More research is needed on autism and other developmental delays, the findings of which may form the basis for future study of vaccines and autism. Dr. Pavia said the public raised legitimate questions about whether research can compare vaccinated and unvaccinated populations or better evaluate alternative vaccination schedules, and these issues merit further discussion.

Discussion

Richard D. Clover, M.D., said the National Children's Study (NCS), sponsored by NIH, offers an opportunity to evaluate the interface between genetics and environment in 100,000 children. However, the study will rely on parents' descriptions of their children's vaccine history; he wondered how much it would cost to collect actual vaccine histories on the participating children. Dr. Salmon said a contractor estimated an additional \$20 million would be needed to collect immunization histories, and questions were raised about how to do so. Dr. McCormick suggested also evaluating the costs of a more structured evaluation (beyond questionnaires) of the NCS to assess specific outcomes related to vaccines.

Lisa Jackson, M.D., M.P.H., suggested that a validation study of parental reports on vaccinations may be a less costly compromise. Dr. Salmon responded that many studies have looked at the validity of parental reporting of vaccine history and determined that it is not reliable. The National Immunization Survey relies on provider reports of vaccination, which is a more expensive but necessary approach.

Dr. Lovell suggested that before the VSWG incorporates the input from the public engagement process into its policy recommendations, a more scientific approach to gathering public input should be undertaken.

Dr. Fergie asked how the VSWG report and other NVAC efforts would be incorporated into the newly formed interagency task force created by the Secretary and led by CDC. Dr. Birkhead echoed the need for more coordination among Federal agencies and advisory bodies. Dr. Gellin said the ASH chairs the interagency group, and he (Dr. Gellin) would be informed about its activities. He noted that former Secretary Leavitt had recommended an internal evaluation of HHS' structures to support vaccine safety.

Dr. Jackson asked for the rationale behind suggesting re-analysis of the Thompson thimerosal study. Dr. Salmon said the study design was strong but representatives from the environmental health field and other areas feel that more could be learned from the data with a thorough re-analysis.

Dr. Nevin-Woods reminded the group of the importance of translating scientific findings into useful information that doctors can give to patients. Dr. Birkhead said the inclusion of risk communication research in the agenda is an effort by the VSWG to encourage development of messages that can help practitioners respond to concerns raised by patients. Phil Hosbach of Sanofi Pasteur asked whether public engagement could be an opportunity to explain the existing systems supporting vaccine safety, such as VAERS, postmarketing surveillance, and signal processing. Dr. Salmon said NVPO is developing a parents' guide to vaccine safety that will help providers address parents' concerns. During the three public engagement meetings, presenters offered a short overview of vaccine safety, but information was limited and the purpose of the meeting was to gather information, not teach participants.

RADM Schuchat said her communication staff is working on a provider toolkit for risk communication with more user-friendly, detailed information for parents who want to evaluate the research and understand the risks and benefits. The information includes discussion of how the vaccine safety system works.

Dr. Birkhead proposed drafting a letter to the NIH to recommend expanding the NCS to address vaccine safety issues more effectively. Dr. Pavia agreed that the study represented a one-time chance to gather a wealth of prospective data and therefore merits a significant investment upfront. Dr. McCormick said that, to better answer some of the vaccine safety questions, the study would need a more structured evaluation of the data collected that includes identifying diagnoses and outcomes; such evaluation is costly and would require additional funding.

Action Item

Dr. Birkhead will draft a letter to be sent to the ASH via the NVPO asking that the NCS include verification of participants' vaccine history (instead of relying solely on parental report of vaccine history). NVAC members will provide input into the letter, which will further ask that, with the addition of funding for more reliable vaccine history verification, other considerations for optimal use of the data in the near term include specific outcomes and appropriate methods.

Vaccine Finance Recommendations—Guthrie S. Birkhead, M.D., M.P.H.

Dr. Birkhead presented the finalized report of the group and described three minor editorial changes made. A notice to readers in CDC's *Morbidity and Mortality Weekly Report* will announce the availability of the report on the NVAC website. In addition, CDC is sponsoring a supplement to *Pediatrics* on vaccine financing, and a shorter version of the group's report will be submitted for that supplement. Dr. Birkhead said the draft implementation plan is under development. CDR Angela Shen noted that a template was developed to help agencies map out their roles in implementing the recommendations. She hoped to have a completed table by September identifying, for each recommendation, the lead agency, proposed activity, support needed, estimated cost, and whether the effort requires legislative action. Dr. Gordon praised the template and suggested taking the same approach for the adolescent immunization recommendations.

Financial Implications of the Vaccine Finance Recommendations—Angela Shen, CDR, USPHS, and Lance Rodewald, M.D.

In response to NVAC's request at its September meeting, CDR Shen and Dr. Rodewald are gathering data to evaluate the fiscal implications of the vaccine finance recommendations. CDR Shen noted that the estimates represent new Federal dollars needed to achieve the recommendations. Dr. Rodewald said cost

estimates were derived from the report provided to Congress about the CDC's Immunization Grant (Section 317) Program, which draws on several Federal and State data sources. The annual Section 317 report addresses vaccine purchasing, operations, vaccine administration, and vaccine safety. It also focuses on underinsured children and adolescents who are not eligible for the Vaccines for Children (VFC) program. The following estimated costs were provided, along with a brief rationale of the basis for the estimates.

- Extend the VFC program to underinsured children and adolescents (recommendation 1): \$95 million
- Expand VFC to cover vaccine administration reimbursement for all VFC-eligible children and adolescents: \$865.3 million, with a \$315-million savings to States if they did not have to match Federal funds
- Require that the Centers for Medicare & Medicaid Services (CMS) and CDC publish Medicaid administration reimbursement rates by State and maximum allowable Medicaid reimbursement information by State: No additional cost
- Increase the Federal match for vaccine administration reimbursement in Medicaid: Variable

Dr. Almquist pointed out that the estimate of \$865.3 million is tied to the current maximum rates by State. Dr. Rodewald agreed and noted that if the maximum rate was increased, the estimate would also increase. Dr. Humiston asked for clarification about the calculation of estimates regarding uninsured children. Dr. Rodewald described the complicated factors affecting underinsured children, including whether they receive vaccines through clinics or private providers, that make it difficult to predict accurately the costs of expanding VFC to the underinsured.

CDR Shen said most of the recommendations related to business practices in private providers' offices did not involve substantial additional Federal dollars, and so no estimates were provided. The estimated cost of the recommendation that all public and private health insurance plans voluntarily provide first-dollar coverage for all costs related to ACIP-recommended vaccines is about \$2 billion. The breakdown is as follows: publicly insured 321.1 M for children and 285.0 M for adolescents; privately insured: 408.3 M for children and 738.8 M for adolescents; and uninsured: 135.1 M for children and 118.9 M for adolescents. The figure is based on current coverage rates, vaccine costs by type of insurance, estimated cost of purchase and administration, and the number of children and adolescents not fully vaccinated. CDR Shen clarified that the estimate refers to the cost of bringing all children and adolescents up to fully vaccinated status. It does not, in fact, describe the full cost of first-dollar coverage. Dr. Birkhead asked that staff continue to seek figures that better address the costs of first-dollar coverage.

CDR Shen noted that most of the activities recommended for Federal agencies require no significant new Federal dollars, as they fall into line with what the agencies already do. For the recommendation that Congress request an annual report on the size and scope of the Section 317 program appropriations needed and ensure adequate funding, CDR Shen explained that the estimate of \$442.1 million represents the appropriations needed to fully fund the program (there is no cost to request the annual report).

The recommendation that CMS and CDC collect and publish data on the costs associated with private and public vaccine purchase and administration every 5 years would cost the CDC an estimated \$600,000 (to fund extramural studies). The CMS costs are not yet known.

To expand the Section 317 program to cover additional infrastructure for adolescent and children vaccination, the CDC estimates a cost of \$260.6 million. Dr. Birkhead pointed out that if recommendations 1 and 2 were adopted, many of the other recommendations would not be needed.

Regarding the recommendation that States develop mechanisms for billing underinsured children and adolescents served by public health care providers, CDR Shen noted that ASTHO is developing guidance on billing. She concluded that the full text of the finance recommendations is available online, as is the Section 317 report to Congress. More detailed information on the methods used to calculate the estimates is available on request.

Discussion

Dr. Birkhead said more work is needed to flesh out the estimates. For example, the costs to the States are not included. CDR Shen said the estimates were limited to Federal dollars, and costs from a State perspective may be different. Dr. Birkhead asked that the estimates include footnotes describing the calculations. Dr. Fergie asked what impact the expansion of the State Children's Health Insurance Program (SCHIP) would have on costs. Dr. Rodewald responded that it depends on where children get their vaccines.

Dr. Birkhead clarified that the vaccine finance recommendations were approved by NVAC and forwarded to the ASH. The cost estimates do not affect the recommendations.

Action Items

NVAC will work with NVPO staff to develop an inclusive implementation plan for the adolescent vaccine recommendations approved by NVAC in June 2008. The plan should cover activities of all relevant agencies. Currently there is only a CDC plan which focuses on their activities related to the recommendations.

CDR Shen will further refine the assessment of the cost implications of the vaccine finance recommendations approved by NVAC in September 2008 and provide an updated assessment to NVAC. Additionally, the overall implementation plan will be tracked for follow-up action.

Adult Immunization Working Group Update—Richard D. Clover, M.D.

Dr. Clover said the Working Group has reviewed adult immunization programs in several HHS agencies over the past several months. The group met earlier in the day and is revising its recommendations. The new recommendations will address how HHS can better assess adult immunization programs within the agency and improve vaccination rates. Once the group gets a better understanding of the existing programs, it will partner with the Vaccine Finance Working Group to address finance issues for adult vaccination. Dr. Birkhead noted that Working Group teleconferences involving representatives of the various agencies have been very helpful, and almost all of the agencies have identified areas for improvement. Dr. Clover said the group hopes to present recommendations to NVAC in June.

Discussion

Mr. Hosbach wondered why the focus was limited to government agencies and not private providers, and Dr. Clover responded that the aim was to keep the scope manageable. The first phase of the Working Group's efforts do focus on federal agency activities, however, subsequent efforts will address private provider issues. Dr. Humiston added that the recommendations go to the ASH, not private providers. Dr. Birkhead noted that future efforts may evaluate what's happening elsewhere. Ronald O. Valdiserri, M.D., M.P.H., suggested that Federal funding may help evaluate adult immunization in private practices.

Influenza

2008–2009 Influenza Season—Anthony Fiore, M.D., CAPT, USPHS

CAPT Fiore described how CDC gets information from various resources to inform its surveillance of seasonal influenza trends, which it compiles and feeds back to public health officials, health care

providers, and the public. CDC updates its map weekly tracking the types of influenza virus occurring by region.

Information about morbidity comes from a group of health care providers who provide weekly reports on the numbers of patients they see with influenza-like symptoms. Typically, influenza spikes in February, said CAPT Fiore. Some virologic information comes from laboratories that report weekly on the results of samples. CAPT Fiore said that this season, CDC found that most of the influenza type A-H1N1 viruses are resistant to oseltamivir. The CDC is providing interim guidance for health care providers on the basis of this early data. CAPT Fiore pointed out that the type of virus affecting a given region can change over the course of the season and health care providers don't test patients to identify their influenza subtype. He suggested providers evaluate the data for their area to identify the most common type of influenza in their communities or use rapid antigen testing to identify the type. Treatment with zanamivir or a combination of antivirals may be appropriate. CAPT Fiore said he believes this year's influenza vaccine will continue to be effective, but CDC can't confirm its effectiveness until the influenza season ends.

To track vaccine coverage, CDC uses registries and has expanded the National Immunization Survey. Its surveillance efforts will capture changes over time in the incidence of influenza and vaccine coverage. CDC has expanded its evaluation of the effectiveness of its influenza vaccine to four sites and hopes to assess effectiveness shortly after influenza season ends, depending on the severity of the season.

CDC is also funding research on school-based vaccine programs, improving office-based vaccine rates, and increasing awareness about VFC eligibility among alternative site providers of influenza vaccine. CAPT Fiore emphasized that CDC communicates frequently to the public and others about influenza before and during the season about the need for vaccination.

Discussion

Dr. Dekker asked whether CDC collects information on the immunization status of household contacts of young children. CAPT Fiore said CDC focuses mainly on identifying the types of viruses and the age groups affected. Dr. Pavia asked whether CDC could explain the shortage of antivirals. CAPT Fiore said manufacturers assured CDC before the season that the supply was sufficient, but the market is fairly small. The manufacturer of zanamivir planned to have more drug available but ran into supply chain problems. CAPT Fiore asked that those having problems getting antivirals should report their experience to the Food and Drug Administration (FDA).

Mark Feinberg, M.D., asked about the implications of emerging resistance to antiviral drugs. CAPT Fiore said the same kind of resistance was noted in Europe last season; in Japan, where antivirals are used the most, little resistance has occurred. Therefore, virologists believe the resistance may not be related to the use of antivirals or antibiotics. However, CAPT Fiore said, we do need to consider the evolution of the virus and develop a larger armamentarium.

Dr. Nevin-Woods asked whether CDC planned to promote stronger recommendations or more education on influenza vaccine for pregnant health care workers. CAPT Fiore said he was not aware of a specific focus on health care workers.

Dr. Mason said the price of influenza vaccine is dropping in his State (Utah), creating an incentive to delay vaccination. Mr. Hosbach said there is currently an oversupply of vaccine in the United States. Despite the expanded recommendations, pediatricians have not increased their ordering of vaccine over last year, said Mr. Hosbach, so the success of the expanded recommendations is questionable.

CAPT Fiore noted that Google found search trends tracked closely with CDC surveillance data on influenza. That is, when Google surveys the use of search keywords related to influenza, the company rapidly gathers data that reproduces the CDC's models of incidence fairly accurately. Google's results will be published shortly.

Pre-pandemic Vaccination Policy—Andrew T. Pavia, M.D.

Dr. Pavia said NBSB is evaluating the prospect of pre-pandemic use of pandemic influenza vaccine, which is being considered in other countries. The WHO's SAGE is performing a comprehensive review of the topic and will meet to discuss it in April.

Pre-pandemic vaccination involves using H5 or some other vaccine to prevent a potential pandemic before a true pandemic outbreak occurs. The United States has a stockpile of pre-pandemic vaccine that, until recently, offered narrow protection and had limited uses. The development of novel adjuvants has dramatically altered the potential uses of the existing vaccine. Large, phase-III studies are still needed, but consistent evidence has shown three different adjuvants to be effective. The adjuvants allow use of much less vaccine to achieve the same immunogenicity and, more importantly, may induce broad, cross-neutralizing antibodies. Evidence suggests that a perfect vaccine match is not needed to ensure protection. In addition, the adjuvants may act as primers; that is, while the first or second vaccine dose may be a poor match, the use of adjuvants may improve the response to a later, better-matched vaccine.

Dr. Pavia said NBSB (of which he is a member) was asked by the BARDA and ASPR to evaluate the policy implications of pre-pandemic vaccination. Dr. Pavia said NBSB first seeks to define who should be represented in the subgroup evaluating pre-pandemic vaccine. Dr. Pavia emphasized the need for input from people with experience in past episodes involving complex public-health decision-making. The makeup of the subgroup and format of the meetings remain to be determined, and Dr. Pavia stressed that the issues are politically sensitive.

Discussion

Dr. Birkhead pointed out that the novel adjuvants are not yet licensed in the United States and wondered whether they would require an investigative new drug application process. Dr. Pavia said one option is to declare an emergency for specific groups and use the adjuvants under an FDA emergency use authorization. Dr. Baylor said FDA is discussing the issue with its counterparts around the world. He believes that data from ongoing research by influenza vaccine manufacturers will drive the process, but the decision to pursue pre-pandemic vaccine should be a global one. Dr. Gellin said the United States has the vaccine in its stockpile; the question is whether the benefits of using it for pre-pandemic vaccination outweigh the risks. Dr. Baylor countered that the decision should be based on data, not the availability of vaccine in the stockpile. Dr. Pavia said in the United States, decision-making has not reached that level.

Dr. Salisbury described the WHO virtual stockpile of H5N1 vaccine and said the SAGE meeting is intended to address the best uses of the stockpile. Dr. Pavia emphasized that the biggest challenge is grappling with the issue of using a non-licensed vaccine for a disease that does not yet exist.

Rescoping the Pediatric Vaccine Stockpile—Abby Shefer, M.D., CAPT, USPHS

CAPT Shefer described the pediatric vaccine stockpile developed to address shortages in vaccines for children. The goal of having a 6-month supply of all pediatric vaccines in the stockpile has only been partially accomplished. A software tool is being developed to better manage the stockpile.

CDC is considering rescoping the pediatric vaccine stockpile to ensure that it has a 6-month supply of vaccine sufficient to meet the needs of the VFC program rather than the current goal of a 6-month supply to meet national needs. CAPT Shefer said a 6-month supply for VFC is about 45 percent of that needed

for 6 months at the national level. She noted that the VFC legislation provides CDC with some flexibility, and the goal of rescoping is to maximize the flexibility of the stockpile while minimizing the risk of purchasing and storing vaccine that is not needed.

CAPT Shefer presented CDC's model of the potential health impacts of rescoping in the event of a 1-year supply disruption and described the factors affecting the model. The table breaks down potential morbidity and mortality on the basis of a low stockpile (VFC supply) or a high stockpile (national supply) for 12 vaccines. Taken together, a low stockpile of all 12 vaccines could result in 14,748 cases and 1,492 deaths; a high stockpile could result in 2,134 cases with 508 deaths. CAPT Shefer provided more detailed descriptions of how the figures were calculated for each vaccine, using human papillomavirus (HPV) and rotavirus vaccines as examples.

CAPT Shefer pointed out that achieving a 6-month supply for the VFC program would require about \$1.5 billion, of which almost \$1 billion would be new dollars. To achieve a 6-month national supply would cost about \$3.4 billion, of which \$2.7 billion would be new dollars. Additional doses of most vaccines are needed to reach the 6-month supply goal for either VFC or national use.

While the net differences in morbidity and mortality could be substantial, as demonstrated by the model, CAPT Shefer noted that 99% of the deaths would be the result of two diseases: hepatitis B and HPV. However, epidemiologists believe that if the vaccine supply runs out for either disease, it is possible to catch up with later vaccination. The costs of bringing the stockpile up to either VFC or national supply levels is significant, but the proposed rescoping would mean less financial risk, and CDC can store a larger proportion of the stockpile at one site if the overall supply is smaller.

Relying on expert opinion and experience, CDC has devised some potential minimum vaccine schedules to consider in the event of a shortage, and these minimum schedules were not included in the morbidity/mortality model. The minimum schedules could provide more flexibility and allow for more efficient use of stockpiled vaccine during a shortage.

The VFC's governing board supports rescoping to a 6-month VFC program supply. CAPT Shefer said CDC is working on a report to the Office of Management and Budget complete with budget projections. She asked for input from NVAC.

Discussion

CAPT Shefer explained that the stockpile had not been evaluated for at least 5 years and CDC wanted to apply a scientific model that would allow it to consider the best use of public funding. Dr. Rodewald noted that the original vision for the stockpile did not anticipate storing billions of dollars' worth of vaccine.

Dr. Pavia expressed surprise that the lack of hepatitis B or HPV vaccine would have more critical effects than, for example, a measles vaccine shortage. CAPT Shefer said CDC evaluated the long-term consequences of hepatitis B and HPV. Dr. Birkhead questioned the rationale behind stockpiling either hepatitis B or HPV vaccine if it is possible to catch up through later vaccine administration in case of a shortage. Dr. Rodewald said CDC is required by law to stockpile those vaccines but would prefer to keep only a modest amount in storage.

Dr. Pavia asked how the assumptions might change if only the public health perspective were considered. Dr. Rodewald said CDC is using modeling to determine the amount of vaccine in storage that would be sufficient and result in the least amount of wasted vaccine. At present, manufacturers can borrow against the stockpile and sell that vaccine, but CDC is less likely to want to do that during a shortage. Dr.

Rodewald said it would make sense for manufacturers to look at their own stockpiles to maintain supply for the private sector. Dr. Birkhead pointed out that if in times of vaccine shortage, providers could only get a supply of vaccine for the VFC covered population they serve, these providers would be in a difficult position, and thus, on that basis, he would be against the "rescoping" for a VFC supply only. Committee members concurred with this view.

Jeanne M. Santoli, M.D., M.P.H., noted that the United States does not do well with the catch-up approach. Dr. Rodewald pointed out that RADM Schuchat sits on the VFC governing board and is involved in developing the CDC's position, so NVAC and NVPO are represented indirectly. CAPT Shefer said CDC appreciates the expertise of NVAC and suggested it consider a working group that looks beyond the vaccine needs of VFC-eligible children. Dr. Birkhead agreed that a working group may be helpful, and it should include representation from vaccine manufacturers.

Action Item

NVAC will consider creating a working group to address vaccine stockpiling issues. Dr. Birkhead along with NVPO will validate the need and, if confirmed, will identify a chair and working group members.

Vaccine Innovations—Angela Shen, CDR, USPHS

CDR Shen asked NVAC to consider the role of government in vaccine development, specifically for products of limited commercial marketability, and whether NVAC should explore ways to foster innovation for such products. She noted that vaccine development is impeded if manufacturers anticipate that the market return will not cover development costs. A number of Federal entities play a role in vaccine development across the spectrum, from initial research and development through use. The decision to pursue a vaccine is affected by a complex interplay of factors, such as research funding, epidemiologic considerations, liability issues, financing, and reimbursement.

CDR Shen explained that companies choose to launch projects where they see a viable market, public health interest, technical feasibility, and a good fit with the company's portfolio. The viability of a market is determined on the basis of demand from consumers and public health authorities, epidemiologic data, expert opinion, and educated guessing. Markets may be very large, as with routine vaccines recommended for all children; small, as with vaccines for travelers; or unclear, as with emerging diseases. As is common in most medical research, the pipeline of drugs and products narrows considerably as it progresses from basic research to commercial application.

Manufacturers may be able to surmount the technical barriers to developing a vaccine but find no market sufficient to offset the cost of developing an expensive product. Some form of government assistance could break down that barrier. BARDA is an example of government efforts to support vaccine development. The National Vaccine Plan seeks to address some of the development issues, said CDR Shen.

Discussion

Dr. Gellin said manufacturers have acknowledged they have the capacity to develop more vaccines but don't because they are not commercially feasible unless ACIP makes a broad vaccine recommendation. CDR Shen added that for some products, manufacturers say more assistance from the Federal government—e.g., paying for clinical trials—would help them move forward. Dr. Feinberg said the question is not whether government should take on vaccine development but rather what government can do to help mitigate manufacturers' financial risk of vaccine development.

Dr. Gordon stressed that the role of the public sector is to identify and communicate its vaccine needs and priorities, as the IOM did in a 1985 report. By doing so, manufacturers have some assurance that there will be a market for the products they develop.

BARDA Strategic Plan and Vaccine Development—Robin Robinson, Ph.D.

Dr. Robinson explained that BARDA is involved with vaccine development at several points, from identifying threats and emerging disease to advanced product development to stockpile procurement to improving infrastructure for manufacturing. In doing so, it partners with entities across government as well as with manufacturers.

Dr. Robinson pointed to BARDA funding of smallpox vaccine development, which has yielded draft guidance on developing an animal model. BARDA hopes to award contracts this year to acquire more anthrax vaccine and is seeking a third-generation vaccine with a longer half-life. He summarized the pandemic influenza strategy, which seeks to have a stockpile sufficient to vaccinate 20 million people immediately and to vaccinate all citizens within 6 months of identification of a pandemic. The strategy hinges on having versatile, reliable, and redundant methods of producing vaccine.

Dr. Robinson said BARDA's portfolio includes many projects in the advanced development stage, such as antigen-sparing, next-generation, recombinant vaccines for pandemic influenza. He projected that at least two new products will be submitted to the FDA for approval in 2009. Dr. Robinson provided some more details on vaccine adjuvants described earlier by Dr. Pavia and noted that BARDA is working with WHO to fund infrastructure development for manufacturers in several countries. He said that by using the new adjuvants, the current stockpile of 23 million doses of pandemic influenza vaccine could translate into 268 million doses. In 2009, the U.S. government must decide whether and how to support expansion of the stockpile.

Dr. Robinson explained that BARDA would begin releasing the pandemic influenza vaccine from the stockpile when human-to-human transmission of pandemic virus is identified overseas. At that point, manufacturers in the United States and abroad would begin producing additional egg- and cell-based vaccine, which would take about 23 weeks to complete.

Discussion

Dr. Robinson noted that two-thirds of the pandemic influenza H5N1 vaccine in the stockpile is made by one manufacturer whose adjuvant is not as far along in development as other adjuvants. However, the NIH and manufacturers are studying adjuvants, and Dr. Robinson said he is confident that the stockpile is in good shape.

Dr. Clover reminded the group that the United States has never been able to predict a pandemic successfully, adding that we tried and failed with swine influenza. He worried about putting so much effort into the H5N1 vaccine. He lauded the investment in manufacturing infrastructure and asked why more money has not been invested in developing novel antigens that can cross virus strains. Dr. Robinson acknowledged that the concept of a universal vaccine has been floating around for 60 years with little success, but now there are four legitimate candidates, all of which BARDA is monitoring and would become involved with once they complete phase-I study. He admitted that focusing on H5N1 is risky. Doing so, however, has enabled manufacturers to boost its infrastructure, and a successful adjuvant would help reduce the cost of maintaining the stockpile, Dr. Robinson said. Also, because H5 has caused deaths, the virus reference strains are available to manufacturers. Other potential pandemic influenza viruses are H2 and H6, and pilots are being developed to study them, said Dr. Robinson.

Dr. Clover said NIH, WHO, and others are investing in vaccine development with limited success. He suggested NVAC could play a role as a partner in identifying strategies for emerging disease. He asked who is responsible for prioritizing vaccine needs in the United States and pointed to the emergence of methicillin-resistant staphylococcus aureus infection as an issue that has risen to a high level of concern.

Dr. Gellin pointed out that the revised National Vaccine Plan includes identifying priorities. Dr. Gordon suggested that the plan elaborate on the vaccine priorities for the United States and the products needed. He pointed to the lack of a systematic approach to vaccine development.

Dr. Pavia questioned whether NVAC had the appropriate level of expertise and representation to address the question of the government's role in fostering innovation. Dr. Humiston felt NVPO could address the question. Dr. Mason felt NVAC already has major issues such as vaccine safety to grapple with, and other advisory groups would be better suited to consider the question.

A representative from Novartis, Dr. Clem Lewin, said that, from a commercial perspective, concerns remain about how—or whether—to develop vaccines for small or uncertain markets, such as West Nile virus. He wondered whether NVAC or some other government entity could identify which products should move forward. Geoffrey Evans, M.D., added that one factor affecting innovation is that the Federal vaccine compensation program offers some liability protection for manufacturers.

Dr. Gellin agreed with other members that NVPO, not NVAC, should play a role in identifying products that are technically feasible and should move forward in development.

Agency, Department, Advisory Committee, and Liaison Reports

U.S. Agency for International Development (USAID)—Margaret McCluskey, R.N., M.P.H.

Ms. McCluskey said that USAID always looks at vaccine issues through an international lens. It has developed cooperative agreements to address AIDS and HIV and is currently seeking to establish an international AIDS initiative to study new candidates for vaccines.

ACIP—Ciro Sumaya, M.D.

Dr. Sumaya said that ACIP is meeting February 25–26; the meeting agenda was provided to the NVAC members and is available to the public. Updates following the meeting will be posted on the CDC ACIP website [<http://www.cdc.gov/vaccines/recs/acip/meetings.htm>].

America's Health Insurance Plans (AHIP)—Wayne Rawlins, M.D., M.B.A.

Dr. Rawlins said AHIP has been active in the discussions of the Vaccine Finance Working Group. He said the AHIP 2008 Immunization Recognition Program Report is available online and identifies plans with “best practices” for offering immunization services to its members. He recommended that all NVAC members review it. A more detailed written report was provided to NVAC.

Action Item

Dr. Rawlins will provide the link to webpage for the AHIP 2008 Immunization Recognition Program Report for the NVAC members.

National Center for Immunization and Respiratory Diseases—Anne Schuchat, M.D., RADM, USPHS

RADM Schuchat said Minnesota experienced more cases of haemophilus influenza type B (Hib) in 2008 than it had since 1992. Of five cases, three occurred in children whose parents refused vaccination, and one of those children died. The issue may have been complicated by a vaccine shortage that led to

deferrals of booster shots. Evidence from registries showed lower than expected coverage. RADM Schuchat said CDC is heightening surveillance but is not yet aware of similar problems in other areas.

The National Immunization Survey relies on random digit dialing to identify a sample. CDC will conduct a pilot study with the U.S. Census Bureau to assess the feasibility of using the Census Bureau's American Community Survey, which could offer a more sustainable sampling methodology.

Richard Besser, M.D., became the acting director of the CDC and appointed RADM Schuchat as Interim Deputy Director for Science and Public Health. As a result, a number of people at the National Center for Immunization and Respiratory Diseases are serving in new roles. A more detailed written report was provided to NVAC.

United Kingdom Department of Health—David Salisbury, C.B., F.R.C.P., F.R.C.P.C.H., F.F.P.H.M

Dr. Salisbury said the school-based HPV vaccine program that got underway in September is going well. Coverage appears to be high. The United Kingdom established a measles-mumps-rubella vaccine catch-up program to vaccinate those who refused vaccine because of concerns about a possible link with autism. The effort appears to be going reasonably well; real-time data are available on those ages 5–16 years and the vaccine supply is matching estimates of need. There were 1,300 confirmed cases of measles in London in 2008. This year, relatively few cases are occurring in London, but more are occurring in other parts of the country.

Health Resources and Services Administration (HRSA)/Vaccine Injury Compensation Program—Geoffrey Evans, M.D.

Dr. Evans said the program's decisions in the three autism test cases on the first theory are expected soon. The decisions will be publicly posted shortly after they are relayed to the parties involved in the cases.

HRSA has contracted with IOM to study adverse events for vaccines reported in the literature for varicella, influenza, hepatitis B, and HPV. More vaccines may be studied if additional funding is received.

Dr. Evans announced that Magdalena Castro-Lewis, a public representative on the Advisory Commission on Childhood Vaccines, will serve as the Commission's liaison to NVAC. A more detailed written report, including an update on the Advisory Commission on Childhood Vaccines, was provided to NVAC.

NIH—George Curlin, M.D.

Dr. Curlin said NIH bases its priorities on a scientifically-driven assessment of promising research efforts. He appreciated the recognition that NIH plays a role early in the pipeline of product development but emphasized that creating products is a team effort and NIH is just one player. The NIH is happy to be involved in identifying priorities, said Dr. Curlin, recognizing that priorities are driven by funding and based on peer-reviewed qualitative research. He commended Dr. Robinson for pointing out the market-drawn nature of the vaccine development process. Dr. Curlin noted that the commercial market is huge, but public health needs may elevate issues to prominence in a noncommercial public market. He felt there may be a role for NVAC involvement.

FDA—Norman Baylor, Ph.D.

Dr. Baylor said FDA and NIH met in December to discuss pandemic influenza vaccine adjuvants, and a transcript of the meeting is available online. Among the next steps is to develop criteria for evaluating novel adjuvants. FDA is planning to approve continuation of pediatric trials on potential pandemic H5N1 influenza vaccine. It is also considering a quadrivalent influenza vaccine.

[Note: December 2008 meeting details located at: <http://www.fda.gov/cber/meetings/adj120208.htm>.]

Other Agency and Liaison Reports

Additional written reports were submitted by the Department of Veterans Affairs and the Public Health Agency of Canada.

[Note: Submitted reports are located in the Appendix following the minutes]

Public Comment

Jim Wheadon of the Safety Alliance said that providers are required to keep reports on adverse events, so it should not be hard to include such reporting in electronic databases. He added that the NCS includes enough unvaccinated children that it could allow for analysis of sufficient power of that population, but there is no protocol to include such an analysis. He called for better study design.

Janice Fajarito of Becton, Dickinson, and Company asked that NVAC consider the role of delivery systems in improving safety in vaccine administration and enabling the National Vaccine Plan goals and objectives. Approximately 80 percent of vaccines in the United States are packaged in vials and delivered using disposable syringes. A change in vaccine packaging from vials to integrated container and delivery systems, such as the manufacturer supplied prefilled systems, has the potential to minimize vaccine waste and extend supply, increase efficiency in the administration of vaccines and reduce medication errors, said Ms. Fajarito.

State of the Program Report: Review of Recommendations—Guthrie S. Birkhead, M.D., M.P.H.

NVAC members reviewed a revised draft of the recommendations. A paragraph was added that summarizes the conclusions of the report and serves as a brief rationale for the recommendations. Suggestions were made to revise the language further so that the recommendations focus on ensuring that the National Vaccine Program has sufficient resources and authority to carry out its mission. Discussion centered around who has the authority to ensure the National Vaccine Program has sufficient resources and whether NVAC can recommend organizational restructuring. Members decided to identify some of the recommendations as operational in nature because they explain what needs to be done to achieve the broader goals. Dr. Gordon suggested and the rest of the Committee agreed to approve the substance of the recommendations, pending final revisions to the report, which will be circulated among NVAC members.

Action Item

Dr. Birkhead will finalize the *2008 State of the Program Report* (National Vaccine Program) and send it to the ASH before the June 2009 NVAC meeting for consideration as the Department makes the transition under a new administration.

Day 2—February 6, 2009

Introduction—Guthrie S. Birkhead, M.D., M.P.H.

Dr. Birkhead noted that the goal of the day's agenda was to get stakeholder input on a revised draft of the National Vaccine Plan, which has not been updated since its first iteration in 1994. As an advisory body with representation from major stakeholders, Dr. Birkhead said, NVAC can play a role in getting comments from non-Federal stakeholders.

The morning session would feature five breakout sessions, each corresponding with one of the five goals of the plan. The afternoon would feature five more breakout sessions, each corresponding with a different stakeholder sector. NVAC will compile the results of the breakout sessions with written comments received into a report for NVPO and IOM.

Dr. Gellin said that of the four Federal advisory committees that provide expert advice to the Department on vaccine issues, NVAC best represents the broad community of stakeholders in the vaccine enterprise. Pointing out that vaccines are part of everyone's life, he asked for suggestions on how to get input from an even broader range of stakeholders.

Dr. Gellin emphasized that the draft plan represents information from agencies across the Federal government that have a significant interest in vaccines. The result is a broad Federal plan that must now evolve into a national plan that includes all sectors.

Introduction to the National Vaccine Plan—Raymond A. Strikas, M.D., CAPT, USPHS

CAPT Strikas explained the various efforts underway to gather input from stakeholders across the spectrum of the vaccine enterprise. He noted that NVPO is open to suggestions about other mechanisms to gather input, such as web-based comment forums. The draft strategic plan identifies goals, objectives, and strategies. Eventually, NVPO will develop a companion implementation plan that identifies specific activities and the entities accountable for carrying them out. A final draft is expected in early 2010.

CAPT Strikas noted that the initial comment period was intended to provide some input for consideration at this meeting. However, the public comment period has been extended to March 31, 2009. NVPO is seeking input on whether the plan should be achievable or aspirational—that is, should it focus narrowly on what clearly can be accomplished in 10 years or should it set goals that would require innovative collaborations, mechanisms, and resources to achieve?

Discussion

CAPT Strikas said summaries of the comments received would be posted on the NVPO website. Individuals may e-mail NVPO at NVPCComments@hhs.gov for copies of the plan or comment summaries. Dr. Gellin noted that all posted comments would be attributed, so personal information may be edited out of comments.

Dr. Mason asked what NVPO expects to happen by 2020 as a result of this plan. CAPT Strikas said that the plan would specify a process for prioritizing research and development of new vaccines, something that's been under discussion for 20 years. It would also address vaccine supply disruption (an issue recently raised by the Hib vaccine shortage in Minnesota), and NVPO is seeking input on whether the proposals to eliminate supply disruption are feasible and useful. The plan addresses the capability to provide mass vaccination in an emergency, said CAPT Strikas. In addition, the plan offers some aspirational goals, such as including vaccine education in all medical and nursing school curricula. Dr. Gellin reiterated the need to balance achievable and aspirational goals. Aspirational goals require more money and other resources, and the plan would have to consider how to marshal resources to go beyond the long-term goals of current planning efforts.

Dr. Gellin noted that several 5-year plans are already underway, and the National Vaccine Plan sought to look beyond those efforts by creating a 10-year plan. Dr. Fergie asked what impact the 1994 plan had, particularly among manufacturers. Dr. Gordon noted that the 1994 plan focused on what Federal agencies would do in the context of the broad vaccine enterprise; he asked for more detail about how a national plan would go beyond Federal participation. CAPT Strikas said NVPO is seeking input on how non-Federal stakeholders can play a role in a national plan. He added that NVAC may be the ideal group to evaluate progress on the plan's goals. Dr. Gellin acknowledged that accountability in the context of a national plan is tricky, but the vaccine enterprise extends well past Federal agencies, so other sectors must be included.

Dr. Feinberg stressed the importance of a clear implementation plan that facilitates tracking and accountability. Dr. Gellin said implementation planning is relatively easy among Federal agencies, but, again, more difficult for other sectors. However, the initial strategy must be complete before implementation can be undertaken.

Via phone, Dave Strickland called for more research on the potential link between vaccines and neurologic disorders in children. Dr. Birkhead noted that the goal of enhancing vaccine safety will likely include a research agenda focused on determining risks and benefits of vaccines. Dr. McCormick reminded the commenter that NVAC is evaluating and gathering input on the CDC ISO research agenda, which specifically targets neurologic concerns.

RADM Schuchat noted that as the plan is fleshed out, lead Federal agencies should be identified.

Dr. Pavia suggested using media channels to solicit broader public input on the plan, and Ms. Parnell suggested social networking media. Mr. Strickland said more media coverage, e.g., a national Internet poll, would draw more public involvement. Dr. Humiston said NVPO appears to lack expertise in public relations and media, but Dr. Gellin said NVPO's public affairs staff is seeking to leverage new media opportunities. Dr. McCormick said that many major polling firms have web-based technology that allows them to gather input quickly and inexpensively from hundreds of thousands of people.

Action Item

Dr. Gellin will ask NVPO public affairs staff to provide information on media outreach efforts around the National Vaccine Plan, particularly use of new media tools.

RADM Schuchat shared some of her experiences with national surveys; she emphasized that crafting survey questions appropriately is the single most important step.

A woman named Lisa called in and identified herself as an individual with a background in molecular genetics who is also a parent of an autistic child. She wondered which breakout group would most benefit from her knowledge set. CAPT Strikas said that goal 1 would encompass vaccine safety before licensure, while goal 2 addresses safety after licensure. Katherine Walker said that her interest in vaccine safety arose when she learned that the vaccine her son received had been manufactured 5 years before the physician administered it. In the course of looking into that particular vaccine, Ms. Walker learned that the VAERS contained a report on every lot manufactured. She pointed out that it would not be acceptable to sell a car for which every model had some problem.

Isabelle Claxton of GlaxoSmithKline said some elements of the plan, such as more research by NIH and increased funding for adult vaccines, could be addressed through legislative measures, especially in the context of health care reform efforts.

Breakout Group Summaries

[Note: More detailed information on these break-out sessions can be found on the NVPO National Vaccine Plan website (http://www.hhs.gov/nvpo/vacc_plan/).]

Goal 1: Develop New and Improved Vaccines

CDR Shen reported that the group suggested NVPO commission an appropriate body, such as IOM, to prioritize the needs for new vaccine development and link its findings to related areas of vaccine development (e.g., regulatory approval, ACIP recommendations, and reimbursement). The group felt new

vaccine development should be clearly distinguished from research to improve existing vaccines. Participants felt strongly that the Plan should include maternal immunization (e.g., discussion of barriers to development) and discussion of development of vaccines for whom the primary benefit of the vaccine is not realized by the person vaccinated (e.g., maternal immunization for fetal benefit). The group suggested that the document clarify that pre-licensure safety information (e.g., from preclinical trials) should inform post-licensure safety considerations.

Goal 2: Enhance the Safety of Vaccines and Vaccination Practices

Dr. Pavia said this group had a lengthy discussion about research to identify individual risk factors and possible predisposition to adverse effects of vaccine. There was consensus among the group about the importance of this new field of science, although some cautioned against being unrealistic or over-promising. The group expressed support for reducing administration errors, including better tracking and recording. Education is critical, particularly to ensure that health care providers know how to use VAERS to facilitate better tracking and reporting of adverse events. New systems, such as electronic health records, may allow for better data transmission and integration. The group considered dissemination of safety information gathered from various surveillance methods to be very important for restoring public trust in the vaccine enterprise and maintaining transparency.

Goal 3: Support Informed Vaccine Decision-Making by the Public, Providers, and Policy-Makers

Dr. McCormick reported that this group felt research strategies should address cultural appropriateness for the varied populations in which the vaccines are used. The diversity of the population and differences in health literacy must be incorporated into efforts to support informed decision-making. Education efforts should take into account the tension around balancing informed decision-making and encouraging vaccine uptake. The public needs education about access to and evaluation of scientific literature that addresses how vaccines are studied and tested, as well as vaccine-related supply issues. Educational messages about vaccines should be tailored to the audience, including the general adult population (not just parents considering vaccines for their children) and those in nontraditional settings (e.g., long-term care, institutional settings).

The Plan would benefit from more emphasis on the role of professional organizations and nongovernmental in developing immunization education. The role that nontraditional vaccine providers (e.g., obstetrician–gynecologists and nurse-midwives) play in immunization education should be addressed. The Plan should clarify that educational strategies should be ongoing. Barriers to vaccination other than safety concerns, such as financial barriers, should be addressed.

The group felt the indicators were not very well thought out and would benefit from a broader perspective that addresses system-level requirements. Dr. McCormick said goal 2 appears to overlap with other goals, particularly in terms of strategies, and the Plan should be evaluated for overall coordination across goals.

Goal 4: Ensure a Stable Supply of Recommended Vaccines and Achieve Better Use of Existing Vaccines to Prevent Disease, Disability, and Death in the United States

Dr. Nevin-Woods reported that the group focused primarily on the goal of establishing a vaccine stockpile and proposed wording to ensure the equality of the vaccine supply for both the public and private sector. Vaccination of health care providers was considered a priority, but the group was divided on the role of mandates to achieve that goal. The Plan should seek creative mechanisms for reaching underserved populations and support development of culturally sensitive education and outreach materials. Providers should have systems to reach underserved populations.

The Plan should ensure adequate payment of providers for vaccination services, including counseling, vaccine storage and handling, and vaccine administration. The role of employers in reducing financial and other barriers to vaccination should be emphasized. Immunization information systems should be

improved to facilitate better recordkeeping, accountability, recall, and tracking. The correlating indicator should spell out the need to include an accurate transfer of vaccine information from the provider to the information system and should support the local and national health information technology committees evaluating such systems. The indicator suggested to measure the reduction in financial and other barriers seems to measure the perception of barriers rather than the reality.

Goal 5: Increase Global Prevention of Death and Disease Through Safe and Effective Vaccination

Dr. Mason reported that there was consensus among the group on the need for a global health goal in the National Vaccine Plan. The group recommended increasing communication regarding the relevance of global health to U.S. citizenry. The Plan should work out the tension between “achievable” and “aspirational”—and in that context, address the leadership role of the United States. The Plan should incorporate the importance of sustainability of goals throughout. It should recognize that our commitment to global health should reflect our foreign policy interests, and there should be greater communication between foreign policy and global health stakeholders.

The group felt the Plan should better identify all potential partners and stakeholders in global health (e.g., academic organizations, nongovernmental organizations, professional associations, and manufacturers) and should reach beyond traditional partnerships in the immunization world. The content should be cross-referenced, so that relevant partners and initiatives are recognized throughout the Plan. The Plan should emphasize that immunization should be an integral part of providing prevention and treatment services.

Dr. Birkhead noted that in another session, participants suggested evaluating WHO’s global vaccine goals in the context of goal 5.

Vaccine Industry and Vaccine Researchers

CDR Shen reported that two companies said they were developing report cards that would allow them to compare their current and future planned activities against the Plan. The group felt that if the U.S. Government commits to implementing the activities described in the Plan and designates funds to do so, other stakeholders are likely to follow (as seen, e.g., with pandemic influenza). The group emphasized the importance of top-level administration support for the Plan. The group agreed that there should be more time for stakeholder input and another round of review before the draft becomes final.

Public Health Organizations (note: “Other Groups” merged with this session)

Dr. Nevin-Woods reported that the most important issue relayed in the session is the need to include a mission statement in the Plan that reflects the critical importance of preventing infectious diseases through immunization and, optimally, preventing adverse reactions to vaccines. The global aspects of the plan should be cross-referenced throughout the many goals and objectives. A number of additional stakeholders (e.g., parents, the public, nongovernmental organizations) should be included in several goals and objectives. Non-Federal stakeholders and their roles should be included in Appendix 3.

The Plan should reflect a process for fast-track approval of other nations’ approved vaccines for a U.S. national emergency. The group expressed great interest in the implementation portion of the Plan, noting that it should identify the roles and responsibilities of those involved. Education of health care providers, including nontraditional providers (e.g., pharmacists, chiropractors, dentists, allied clinics), should address vaccine safety issues, including reporting adverse events.

Health Professionals Organizations

Dr. Pavia reported that, in reviewing the list of organizations that had submitted comments, it was clear to the group that many major organizations and many with more indirect interests, such as labor unions or complementary and alternative medicine providers, had not provided comments. The group encouraged

NVPO to reach out to those groups for comment and suggested a number of specific organizations from which comments should be requested. It might be helpful to direct a given organization to specific parts of the Plan for comment.

The group encouraged early and ongoing dialogue between NVPO and professional organizations to ensure buy-in, so that organizations are more likely to commit to implementation of the Plan. There is some interest in including an indicator that measures administration of vaccines.

Health Care Payers and Plans

Dr. Mason reported that health care payers/plans support immunization as an effective preventive health measure. The group felt that the Plan should incorporate more evidence-based public education on the value of preventive health services, including vaccines. There are concerns about the cost of immunization, but the plan should recognize that cost is not the only barrier. There are also concerns that the term “financial barriers” seems to open the door for government mandates. The Plan should tease out the differences and the overlapping issues of public and private vaccine reimbursement and eligibility. More evaluation is needed on cost-effective delivery models and best practices. There is strong support for registries (immunization information systems) to support various aspects of the plan, including delivery, adverse event reporting, and reminders/recall.

Public Comments

Dr. Tom Vernon said that many children in the United States today are unlikely to be exposed to some of the diseases for which vaccination is recommended, but more widespread vaccination benefits the community as a whole. He said the Plan does not adequately communicate the message of vaccination as a social responsibility.

Jim Moody, JD of SafeMinds said the Vaccine Injury Compensation Program was not discussed. It’s an important part of the vaccine enterprise, but there is disagreement on how well it works. The statute of limitations for the program of 3 years is “abysmally short,” he said. He suggested the program be included in the Plan and discussed in more depth by NVAC.

Closing Remarks

Dr. Birkhead said NVAC welcomes additional suggestions on enhancing the National Vaccine Plan. He thanked the members and all the participants for their contributions to a productive meeting and adjourned the meeting.

Adjournment

The meeting adjourned at 3:30 PM.

I hereby certify that, to the best of my knowledge, the foregoing minutes are accurate and complete.

April 28, 2009
Date

/Guthrie S. Birkhead/
Guthrie S. Birkhead, M.D., M.P.H.
Chair, National Vaccine Advisory Committee

These minutes will be formally considered by the Committee at its next meeting, and any corrections or notations will be incorporated in the minutes of that meeting.

Appendix

Agency Reports

Summary of AHIP Immunization Activities – February 2009 NVAC Meeting

1. 2008 Immunization Survey – AHIP has completed data collection and analysis for the 2008 survey on the immunization policies and practices of health insurance plans. The survey elicited a 56% response rate, with 58 AHIP members responding on benefits that cover more than 121 million lives. A similar survey in 2005 elicited a 44% response rate describing the immunization benefits of almost 58 million lives. The results will be available through the first half of 2009.
2. 2008 Immunization Recognition Program – AHIP continued its Immunization Recognition Program, acknowledging nine health insurance plans that showed the greatest improvement in childhood, adolescent, and adult influenza immunization rates, according to their HEDIS scores, and the practices that led to their improvement. Program booklets are available online and AHIP plans to conduct this program again in 2009.
3. 2008 Immunization Roundtable Report on Vaccine Financing – In July 2008, AHIP convened a group of diverse stakeholders committed to improving immunization delivery, to discuss issues related to vaccine finance in light of recent recommendation by NVAC and related studies. All participants reaffirmed their commitment to ensuring that all American's receive the appropriate vaccines and identified opportunities for future dialogue and collaboration, including: identifying efficient practices in immunization delivery and working with providers to replicate those practices, supporting the vaccine delivery infrastructure, assessing the importance of vaccine financing as a factor in the timely delivery of immunization, working with all stakeholders to increase immunization rate. AHIP is planning to convene a Roundtable in 2009, building on themes identified at the 2008 Roundtable.
4. Best Practices: Health Insurance Plans and Immunization Providers – AHIP is reaching out to member plans and other immunization stakeholders to develop a publication on best health insurance plan immunization practices with a focus on communication with providers. The goal is to identify health insurance plan practices and policies that enhance immunization delivery and encourage their replication.

Wayne S. Rawlins M.D., MBA
National Medical Director
Aetna Government Health Plans
Aetna

Update from National Center for Immunization and Respiratory Diseases (NCIRD) and CDC

NVAC Meeting February 2009

1/23/2009

1. Vaccine preventable diseases in US

- a. Increase in Hib cases in Minnesota during 2008 with most cases in any year since 1992; 3 of 5 cases in children whose parents refused vaccination. Lower than expected third dose coverage based on registry review, and deferral of booster due to supply limitations following Merck recall may have contributed to increased exposure. Media briefing and MMWR 1/23/2008.
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58e0123a1.htm>.
- b. Measles increase in 2008 (N=140 to date) – most cases in any year since 1996. Seven outbreaks – imports mainly from Europe. Major role of exemptors and other school-aged children whose parents intentionally did not vaccinate their child.
- c. Pertussis - multiple outbreaks requiring public health response, although nationally there have been decreased total reported cases each year since 2005.
- d. Rotavirus gastroenteritis 2007/8 season: Disease reduction now evident from multiple systems (national, sentinel, hospital-specific); much less rotavirus-related gastroenteritis in 2007/8 winter than previous seasons.
- e. Pneumococcal hospitalizations in children remain substantially lower than pre-vaccine era; report in MMWR Jan 16, 2009
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5801a1.htm>.

2. Immunization coverage

- a. National Immunization Survey 2007 – toddler, teen, and influenza reports published. Sustaining high toddler rates, increasing teen and flat flu rates.
- b. Toddlers - $\geq 90\%$ for 5 of 6 vaccines in 4:3:1:3:3:1 series (all but Dtap4). Reduced gaps in coverage by poverty status in PCV7 series.
- c. Flat and low influenza vaccination coverage (both NIS and registries)
- d. Teen NIS shows large $\sim 20\%$ increases for Tdap and Mening conjugate, and 25% coverage first year of HPV monitoring (13-17 yr).
- e. $< 1\%$ of toddlers had received no vaccines at all in 2007 NIS.
- f. Census Bureau (CB) and CDC will conduct pilot study to assess feasibility of using CB's American Community Survey as sample frame for NIS, which currently uses Random Digit Dialing sample frame.

3. Immunization safety

- a. Immunization Safety Office moved from CDC Office of Director to Coordinating Center for Infectious Diseases – Div of Health Care Quality Promotion. Melinda Wharton serving as acting director on 6 month detail to help with transition. A search committee has been formed to identify the next director of ISO.
- b. MMRV – extensive presentation on seizure risk at ACIP. Higher in first 2 weeks following administration of MMRV vs. MMR and V separately; production of MMRV is on hold through 2009; the ACIP removed preference for combination over the two

separately administered; updated recommendations for use of MMRV expected at the June ACIP meeting.

- c. NVAC is overseeing public engagement meetings regarding vaccine safety research priorities
- d. Updates on safety findings for all newly licensed vaccines are provided at each ACIP meeting.

4. Communication/engagement

- a. NCIRD communication staff provided media training to >80 state immunization program managers and others (Nov 2008) and is working with National Public Health Information Council (NPHIC) on media tool kit for state and local public information officers.
- b. Continued development of extensive toolkit for providers to assist parents with vaccine concerns, in partnership with AAP
- c. HealthStyles (population survey of attitudes and beliefs about vaccines) compared 2008 and 2003 responses – preliminary analyses suggests modest increase in concerns.
- d. National Influenza Vaccination Week held Dec 8-14, 2008, including Children's Vaccination Day (12/9), Seniors' vaccination Day (12/11), and a focus on vaccination of health care workers (12/12).
- e. National Infant Immunization Week – Apr 25 – May 2, 2009 – CDC tentatively planning activities in Chicago/Illinois; WA state; San Diego

5. Vaccine supply and development

Hib vaccine still in limited supply – Merck products not expected until mid-2009. The second Hib manufacturer (Sanofi) is able to supply enough vaccine for the primary series (2, 4, and 6 months of age) for all children in the United States. Booster dose being deferred except in high risk children. Some supply and demand mismatch may have contributed to challenges in MN Hib situation (see 1a). CDC is working with MN health department, Sanofi and immunization programs elsewhere to address challenges.

6. Additional Program issues

- a. Exemptions and school requirements – increasing issue for programs.
- b. Increased focus area for immunization state grantees is to conduct evaluations and strengthen accountability.
- c. Centralized vaccine distribution transition now focusing on vaccine ordering and tracking system

7. Global immunization

- a. Worldwide deaths from measles reduced by 74% since 2000 (MMWR/WER 12/4/2008).
- b. Polio Hall of Fame – Roosevelt Warm Springs inducted CDC, WHO, Unicef and Rotary International into Polio Hall of Fame (first inductees since 1958 when FDR, Basil O'Connor, Salk, Sabin, and 13 others were inducted)

National Vaccine Injury Compensation Program
Summary of Current Issues
February 2009

VICP Thimerosal/MMR vaccine/Autism Litigation

- As of February 1, over 5,500 autism claims have been filed with the National Vaccine Injury Compensation Program (VICP). In 2002, the Chief Special Master of the U. S. Court of Federal Claims ordered a process for adjudicating petitions filed with the VICP alleging autism or autism spectrum disorder (ASD) from either MMR vaccine or thimerosal-containing vaccines, or from both. Over 5,200 pending cases are being divided among the three presiding special masters, the remainder were either dismissed at the request of petitioners, or were dismissed by the Court because of jurisdictional issues.
- The first evidentiary hearing for a test case was held in June 2007. The Petitioners' Steering Committee (PSC) and the respondent presented testimony concerning the "general causation issue" for the combined theory (both MMR vaccine and thimerosal-containing vaccines cause autism or ASD), and also the specific causation issue in the first of three test cases for the combined theory. Hearings in two additional test cases for the combined theory were held later that year. Special master's decisions in the first theory and three test cases are expected soon.
- In May 2008, the Court heard testimony on the general causation issues for the theory that thimerosal causes autism or ASD. Evidence in two test cases for the second theory was also presented. A third test case, and additional evidence on general causation for the thimerosal theory, was presented two months later in July. Decisions in theory two and the three test cases are not expected until later this year or possible 2010.
- A general causation hearing for the third theory (i.e., MMR vaccine alone causes autism or ASD), originally scheduled for mid-September, was cancelled. In August 2008, petitioners indicated in a letter to the Court that they did not plan to introduce new evidence, and would rely on the MMR vaccine evidence presented in the theory 1 proceedings. Both sides agreed there was no need for test cases or a general causation hearing.

Advisory Commission on Childhood Vaccines (ACCV) Meeting

On Nov 18, 2008, the Advisory Commission on Childhood Vaccines (ACCV) conducted its 71st quarterly meeting. The morning agenda included statements and perspectives from various stakeholders of the Vaccine Injury Compensation Program (VICP). Additional agenda items included a presentation on the evolution of the Vaccine Injury Table, an update on the VICP Strategic Plan; a report from the Altarum Institute on the status of the Petitioners' Satisfaction Survey, updates on program activities from DVIC and Department of Justice staff, and on the Omnibus Autism Proceeding by Tom Powers, J.D., Petitioners Steering Committee; and updates from the Commission's ex-officio members representing NIH, CDC, FDA, and the National Vaccine Program Office. On November 19, Commission members attended a workshop held at the 21st Judicial Conference of the U.S. Court of Federal Claims entitled, "Vaccine Compensation Under the Act: A Mix of Science and Policy." Presenters included Dr. Paul A. Offit, Chief of Infectious Diseases and Director, Vaccine Education Center, Children's Hospital of Philadelphia; Kevin P. Conway, Partner, Conway, Homer & Chin-Caplan; Randolph D. Moss, Partner, Wilmer Hale; Ruth J. Katz, Walter G. Ross Professor of Health Policy, School of Public Health and Health Services, George Washington University; and Marguerite Evans Willner, former Vice Chair, Advisory Commission on Childhood Vaccines. The next ACCV meeting will be in Rockville on March 4-5, 2009.

Rotavirus Interim Final Rule

In an interim final rule dated October 9, 2008 (which became effective November 10, 2008), the Department removed one category of rotavirus vaccines from the Vaccine Injury Table (Table). The category, vaccines containing live, oral, rhesus-based rotavirus, included a Table injury of intussusception. Because this category of vaccines was tailored to a vaccine that was recalled by its manufacturer in 2002, the category was limited to vaccines administered on or before August 26, 2002. For this reason, and because petitions for injuries must generally be filed within three years under the VICP, the Secretary determined that no persons were eligible to file claims under the category of vaccines at the time that it was removed. The Table continues to include a general category for rotavirus vaccines, which does not have any associated Table injuries. Petitioners with alleged injuries from any rotavirus vaccines may still file petitions under this general category.

Although the Secretary believes that the rule removing the more narrow category of vaccines from the Table was a technical, housekeeping matter as it did not affect the rights of any potential petitioners with the VICP, a public comment period of 30 days was provided during which the Department received one comment.

Department of Veterans Affairs
Update on Vaccine-related Activities
February 5, 2009
Submitted by Ronald O. Valdiserri, M.D., M.P.H.

- **Seasonal Influenza:**

- On January 12-18, 2009, The Department of Veterans Affairs (VA) sponsored its second annual VA Staff Influenza Vaccination Week. Hundreds of clinicians and influenza “stakeholders” in the VA received electronic posters and table tents to promote this event. Evaluation of the outcome is ongoing.
- In response to CDC’s “Interim Recommendations for the Use of Influenza Antiviral Medication in the Setting of Oseltamivir Resistance among Circulating Influenza A (H1N1) Viruses” (CDC Health Advisory; 12/19/08), the VA Pharmacy Benefits Management Services and the Medical Advisory Panel, in conjunction with the Public Health Strategic Health Care Group, updated the Criteria for Use (CFU) on Antiviral Agents for Influenza. In addition, zanamivir has been added to the VA national formulary.

- **Other**

- A field advisory committee made up of VA providers and policy makers is developing a set of clinical preventive service guidance statements on immunizations (influenza, pneumococcal, meningococcal, tetanus-diphtheria-pertussis, zoster, and HPV) to disseminate throughout the VA system.
-

Report from the Public Health Agency of Canada

February 5, 2009 NVAC Meeting

The Public Health Agency of Canada (PHAC) and its partners held the very successful 8th Canadian Immunization Conference in Toronto between November 30 and December 3, 2008, under the themes of “Partnership, Innovation and Education”. The 8th edition of the Conference welcomed 1,130 participants to 7 plenary and 34 concurrent sessions.

The event represents an exceptional opportunity for health professionals to expand their knowledge in immunization and learn about the latest developments in immunization research, policies, program and practice. It is recognized as a comprehensive and accredited learning opportunity for the participants. The Immunization Competencies for Health Professionals were officially launched at the event and were woven into the scientific program.

In addition to a strong and varied program, the conference offers a Call for Abstracts, an Exhibit Hall, a Vaccinology Student Research Program, a Canadian Immunization Poster Contest and, new this year, Industry-sponsored Satellite Symposia and the Distinguished Lecture in Canadian Immunization Award.

The Canadian Immunization Conference has been held every two years since 1994 and is a highly anticipated event. This conference demonstrates Canada’s commitment to immunization as an important and successful public health measure and reinforce Canada’s leadership role in immunization through the National Immunization Strategy.

Another recent meeting that might be of interest to NVAC members was an international forum that was held late last year. The Conference of Federal, Provincial and Territorial (FPT) Deputy Ministers of Health directed the Pan-Canadian Public Health Network to develop a paper outlining current international immunization strategies and develop options for further consideration, and also to develop options for a Pan-Canadian approach to vaccine evaluation and research. In partial fulfillment of these directives, the Public Health Agency of Canada (PHAC), with guidance from the FPT Canadian Immunization Committee (CIC), hosted a forum on December 4 and 5, 2008, in Toronto with invited speakers from eight (8) “higher-income” countries (Australia, Austria, Belgium, Germany, Spain, Sweden, the United Kingdom, and the United States) to discuss their immunization strategies with respect to three key themes: governance structures, vaccine procurement and funding structures, and approaches to immunization program-related research and evaluation. Participants at the Forum included CIC members, Council of Chief Medical Officers of Health (CCMOHs), representatives from the vaccine industry in Canada, immunization research and program experts, policy experts, and representatives from Health Canada, Industry Canada, the Canadian Institutes of Health Research and PHAC’s Centre for Immunization and Respiratory Infectious Disease and Strategic Policy Directorate. Presenters were asked to speak to the challenges and opportunities associated with their immunization programs, and to address questions from participants. Participants were then asked to consider the models in place in other countries, and to identify key elements, lessons learned and best practices that merit consideration in the Canadian context. Best practices from international partners that apply to the Canadian context will feed into the larger policy review process as Canadian officials consider the future direction of Canada’s National Immunization Strategy.

Canada is also planning to review and strengthen its National Immunization Strategy. Work is under way to map out the process for this review.