Secretary's Advisory Committee on Infant Mortality

Meeting Minutes of
November 29–30, 2005

Washington Marriott Hotel
Washington, D.C.

GENERAL SESSION

TUESDAY, NOVEMBER 29, 2005

WELCOME AND REMARKS

James W. Collins, Jr., M.D., M.P.H., Associate Professor of Pediatrics, Northwestern University Medical School, Chairperson, SACIM
Howard A. Zucker, M.D., J.D., Deputy Assistant Secretary for Health, Department of Health and Human Services

Dr. Collins welcomed the participants to the meeting of the Secretary's Advisory Committee on Infant Mortality (SACIM) and thanked the committee members for their work since the July meeting. After the members introduced themselves, Dr. Collins made several announcements, including one about Jennifer Cernoch, Ph.D., and her new role as chair of the Subcommittee on Maternal and Child Health Funding and Financing. He also called the members' attention to tab 2 of the meeting notebook, which contains background information from the National Center for Health Statistics (NCHS) revealing an increase in low birthweight and preterm birth rates. In addition, Dr. Collins announced that a substantial amount of time during the meeting would be devoted to subcommittee work and that public comments, if any, would be heard during the afternoon session. The committee approved the minutes from the July meeting. In response to a question from Bernard Guyer, M.D., M.P.H., about the letter to the Secretary encouraging him to take action on the research agenda proposed by the Interagency Coordinating Council on Low Birthweight and Preterm Birth (the Coordinating Council), Dr. Collins stated that the letter was forwarded to Secretary Michael O. Leavitt and Dr. Zucker would report on the status of that correspondence.

After an introduction by Peter van Dyck, M.D., M.P.H., Dr. Zucker presented background information about the work of the Medicaid Commission and the issue of an influenza pandemic. The Medicaid Commission will issue recommendations about the modernization of the Medicaid program to provide high-quality care to beneficiaries in a financially sustainable way. It has suggested recommendations regarding prescription drugs, the "spending down" inheritance protection strategy, copayments for optional populations, and flexibility in coverage. The commission also has considered ways to improve home and community care and has examined a number of options for long-term reform. In addition, it is discussing electronic health records for use in the Medicaid population to ensure quality of care. The Medicaid Commission's final recommendations are due in December 2006.

On the topic of the influenza pandemic, Dr. Zucker mentioned the Pandemic Influenza Plan devised by the Department of Health and Human Services (HHS), which includes a request for funding for research and development of vaccines, antivirals, and other pharmaceuticals. The concern is that the Nation be prepared for the inevitable pandemic of H5N1 influenza (bird flu), some other subtype of influenza, or any type of infectious disease, whether natural or manmade. The plan calls for "revving up" the public health system, involving State and local health communities, and enlisting the participation of all Government agencies. Dr. Zucker reported that HHS is moving forward in these efforts to prepare for the pandemic.

In regard to the letter to the Secretary mentioned by Dr. Guyer, Dr. Zucker reported that it has been circulated in the Secretary's Office and is under review.

Discussion

Dr. Zucker's comments prompted the following questions and comments from SACIM members:

- Maxine Hayes, M.D., M.P.H., reported that State governments are concerned about substantial budget cuts that will result from the modernization of Medicaid. Pointing out that the most notable contributions to healthy birth outcomes do not involve the medical component, Dr. Hayes stated that many States work with Medicaid to provide nonmedical components of care for pregnant women. Therefore, preconceptional care to elevate the health of women is a topic of concern, especially in light of the proposed budget cuts. A financing strategy is needed to guarantee the continuation of this care. For example, the State of Washington pairs Medicaid with financial contributions from the maternal and child health block grant to create a comprehensive package that includes psychosocial support, public health nurse visitation, health education, and family planning. Emphasizing the overarching concern that the nonmedical determinants of health will be overlooked in Medicaid modernization, Dr. Hayes asked Dr. Zucker for suggestions about elevating the importance of these issues in the eyes of the Secretary. Dr. Zucker noted that Dr. John O. Agwunobi, a pediatrician with an acute awareness of these concerns, is under consideration for the position of Assistant Secretary for Health.

- Dr. Hayes noted that more women begin pregnancy in suboptimal health than ever before. These women face obesity, diabetes, and hypertension issues, which should be dealt with long before pregnancy.

- Fredric Frigoletto, Jr., M.D., asked about the issue of the timely production of vaccine in preparation for the pandemic and noted that the reasons for the problems with timely production seem to go beyond science. Dr. Zucker commented on the use of egg-based vaccine technology and the need to move toward genetics-based technology. He stated that vaccine production must be increased for both bird flu and the regular flu and the commercial component of the problem must be addressed as well.

- Robert E. Hannemann, M.D., referred to the report of the Coordinating Council. An epidemic of low birthweight has been ongoing for years, and its monetary and human costs are overwhelming. Dr. Zucker agreed that preterm birth and low birthweight have reached epidemic proportions and must be addressed. SACIM's letter to the Secretary is in the process of review at HHS, and Dr. Zucker will inform the committee about its progress.

- Dr. Collins asked Dr. Zucker about ways to raise the issue of infant mortality to a higher level of awareness for the Secretary and the country as a whole. Perhaps a social phenomenon is driving all of the occurrences of disparity (infant mortality, childhood mortality, adolescent mortality, maternal mortality, diabetes, cancer, hypertension), and all of the evidence of disparity can be linked. Dr. Zucker agreed that a common theme might

emerge for consideration. His conversations with Dr. Agwunobi raised questions about the possibility of health education and public health information dissemination as ways of dealing with the issue.

- Robyn J. Arrington, Jr., M.D., asked whether HHS is aware of the role of regional health authorities in eliminating excessive duplication of medical procedures through individualized health profile cards issued to participants in the system. The cards allow tracking of emergency room visits, laboratory testing, and so on. Dr. Zucker stated that this strategy involves electronic health records and health information technology, which are critically important for streamlining the delivery of health care while decreasing costs. The challenge involves the time required to convince providers to use the technology to eliminate redundancy in the system.

- Dr. Cernoch referred to the Medicaid Commission's attention to financing issues. She pointed out that eliminating services such as early and periodic screening, diagnosis, and treatment (EPSDT) can lead to disparities in the ability to access health care services from State to State. In addition, services such as EPSDT work well, but the system for delivering these services is threatened with erosion. More attention from the Secretary's level on financing structure and nonmedical supports might obviate the need for interventions involving acute medical care. Infant mortality and morbidity should be examined as part of the financing system. Dr. Zucker agreed that a comprehensive examination of the entire system is needed. States and local communities must develop public health emergency preparedness plans, but the same plan might not work in every State or locality. An attempt must be made to determine the overarching themes that should be consistent from State to State and the modifications that each community requires. Following this strategy will result in some standardization across the States.

- Dr. Frigoletto referred to an article in the *Annals of Internal Medicine* that explains why, beyond issues of confidentiality, privacy, and security, an electronic medical records system has not become a reality. An expert panel estimated that a nationally networked, longitudinal medical records system would cost about $157 billion. Dr. Frigoletto stated that the financial aspect of electronic medical records must be addressed. Dr. Zucker noted that, because individual medical practices have developed records systems that work for them, redoing the systems in an electronic format would be challenging. He noted, however, that other industries have established electronic data systems with a great deal of success.

- Dr. Hannemann commented on the joint statement by the National Academy of Engineering and the Institute of Medicine (IOM) concerning the application of engineering principles to various issues in medicine, including the medical care system. Physicians and engineers have collaborated to create a new tool in this regard.

- Dr. Guyer asked Dr. Zucker for his thoughts on sustaining and supporting the public health infrastructure that links infant mortality and pandemic influenza. An IOM Commission on Immunization concluded that supporting a strong public health infrastructure is essential for issues such as confronting epidemics and bioterrorism. Dr. Zucker stated that the public

health infrastructure must be supported financially and through education and teamwork among Federal, State, and local entities.

- Ann Miller, Ph.D., noted that SACIM speaks for the most vulnerable of American citizens, and she asked about the possibility of the Secretary using his "bully pulpit" to make a passionate statement about his goal of attacking the infant mortality rate. Dr. Zucker affirmed that Secretary Leavitt is passionate about improving the health system in general and for all populations. He will deliver this message from SACIM to the Secretary.

MATERNAL AND CHILD HEALTH BUREAU UPDATE

Peter C. van Dyck, M.D., M.P.H., Associate Administrator for Maternal and Child Health, Health Resources and Services Administration, Executive Secretary for SACIM

Dr. van Dyck presented some of the recent data related to SACIM's work, which will help the subcommittees to write the background sections of their papers. He referred the members to tab 2 in the meeting notebook, which contains articles titled "Births: Final Data for 2003" and "Preliminary Births for 2004: Infant and Maternal Health." The 2003 article highlighted information about increased birth rates nationwide, decreased birth rates among teenagers, increased childbearing by unmarried women, decreased rates of cigarette smoking during pregnancy, improvement in the timely initiation of prenatal care, increased rates of cesarean delivery, increased preterm birth rate, and increased low birthweight rate. The 2004 article highlighted information about a rise in the rate of cesarean delivery to 29.1 percent of all births, no improvement in timely receipt of prenatal care, a slight decline in tobacco use during pregnancy, a rise in the preterm birth rate, and a rise in the low birthweight rate. Dr. van Dyck added that the preliminary data for infant deaths for 2003 indicate a rate of 6.9 deaths per 1,000 live births, which is slightly lower than the previous year's rate. He added that the rate is 5.8 per 1,000 for Whites and 14.1 for African Americans.

Dr. van Dyck reported on applications for funding for six Healthy Start projects. The decision and award process is under way, and the grantees will be awarded sometime after January 1. Dr. van Dyck also mentioned the recently published *Women's Health USA 2005,* which reflects the ever-changing, increasingly diverse population and its characteristics and selects emerging issues and trends in women's health. This year's publication includes information on household composition, maternity leave, contraception, and adolescence pregnancy. Racial and ethnic disparities are highlighted as well as sex/gender differences.

After giving examples of some of the unique information in *Women's Health USA 2005,* Dr. van Dyck described a new program on innovative approaches to promoting healthy weight among women. The program focuses on racial/ethnic minority populations that are disproportionately affected. Three-year grants were awarded to Massachusetts, Ohio, and Texas to target women in communities with limited access to preventive health care and find innovative ways to help women maintain as normal a weight as possible. In May 2005, four additional grants were awarded in Arizona, Delaware, Florida, and Wisconsin. A new competition in the next fiscal year includes funding for three more projects

Discussion

Dr. van Dyck's presentation elicited the following questions and comments:

- Dr. Guyer noted the problem involved in using preliminary data for policymaking. Dr. Hayes asserted that a resolution of the problem will require a collaborative effort between the Federal Government and the States. She added that an adequate infrastructure at the State level is needed to produce more timely information. Dr. Guyer stated that investment by the Administration in the most mundane functions of Federal, State, and local administrative tasks would have a tremendous payoff in providing information about the health of the Nation's citizens. Dr. Zucker pointed out the issues of privacy and regional differences in the use of technology to capture real-time data.

- Deborah Frazier, B.A., R.N., noted that one of the strategies for reducing infant mortality and low birthweight is to fund programs that provide services such as public health nurse visits, case management, and health education. She expressed concern about "losing ground" because of decreased funding for the Healthy Start projects. Dr. van Dyck confirmed that Healthy Start provides services that address the problems of low birthweight and infant mortality, but he pointed out that the program's budget varies depending on decisions made in Congress. The appropriation for last year was about $102 million. The President's budget was $97.8 million for Healthy Start; the Senate mark was $104 million; and the House mark was $97 million. The conference report, which was not passed, was $102.5 million. Because of budgetary uncertainty, it is not known how many projects can be funded at this time. Ms. Frazier noted that Healthy Start is not a priority in the President's budget.

HEALTH DISPARITIES IN MATERNAL AND CHILD HEALTH

Vijaya Hogan, M.D., M.P.H., Clinical Associate Professor and Director of Curriculum on Health Disparities, School of Public Health, University of North Carolina

Dr. Hogan presented information about social and environmental factors and disparities in perinatal outcomes. Her presentation included an overview of the state of the science on social and environmental factors and infant mortality, information about health disparities, and the status of the evidence base for infant mortality reduction and disparity elimination. She also mentioned the notion of feasibility and its potentially adverse impact on eliminating disparities. Dr. Hogan stated that the goal of her presentation was to explain a roadmap to eliminating disparities in infant mortality and suggest recommendations that SACIM could make to the Secretary for addressing those disparities.

Social and Environmental Factors and Infant Mortality

In terms of the ecological evidence of a link between socioeconomic status and health and disease, Dr. Hogan cited studies showing that the disease rates of a population increase as socioeconomic status declines. If education is used as a proxy for income, the gradient shows that health improves as education increases for all groups. However, the infant mortality rate among the highest educated African American women is still higher than that of any education level of any other ethnic group.

In terms of epidemiologic evidence regarding preterm birth and low birthweight, Dr. Hogan pointed out that the established risk markers for low birthweight are ethnicity, low socioeconomic status, single marital status, low education, poor nutritional status, occupational hazards and toxic exposures, and stress. The established risk markers for preterm birth are ethnicity, single marital status, and low socioeconomic status. Dr. Hogan emphasized that one of the limitations of the epidemiologic studies is that they define at-risk populations, but they do not give information about what puts those populations at risk. In addition, the studies show that a great deal of complexity is involved in disparities and disease rates. For example, an examination of multiple risks in a population reveals the striking differences between populations that experience similar individual risk factors. This fact potentially explains some of the higher risks seen among African American women. Another limitation of the epidemiologic studies is that they can elucidate only those areas that provide measurable data.

For qualitative evidence, other factors in the social environment have been shown to cause stress in African American women and increase their risk for death and disease. A series of CDC-funded qualitative studies sought to understand the unique characteristics of the experiences of African American women that are associated with increased risk for death and disease. The Harlem BirthRight Project identified unique stressors that African American women experience, documented the pervasiveness of stress in all aspects of African American women's lives, documented multiple concurrent stressors among African American women, and showed that racism exacerbates other risks. The Braverman study conducted in California found that all ethnic age and income groups experience hardships; Black, Latina, and Native American women suffer more hardships than White women; and poor and near-poor women suffer more hardships than women above 200 percent of the poverty level. Another study linked risk factors to growth retardation and found that, as the number of risks increases, the risk of growth retardation increases.

The social determinants of health include income, racism, resource limitations, and housing quality and availability. These determinants affect the social environment by defining the choices and options available for behavior through "circles of influence." In addition, disparities in social conditions exist in part because of the historical experiences of slavery, segregation, and discrimination. Disparity appears in median family income and in net wealth, and Blacks are more likely to live in low-income, segregated areas with a "concentration of risk." In 2000, 73 percent of Whites owned their own homes compared with 48 percent of Blacks. Social policies prohibited home ownership among African Americans; historic social policies frame current social conditions, and those conditions in turn have an impact on health. Affordable housing is another example of how broader social policies limit the options that people have for the types of behavior they exhibit.

After mentioning a number of articles on environment and racism, Dr. Hogan described the way in which racism operates—by denying privileges and opportunities, failing to undo past social injustices, failing to act in the face of need, and providing inferior resources. A study of Philadelphia women found that neighborhood-level factors such as assault rate, homeless rate, and neighborhood condition account for a large portion of the observed racial/ethnic differences in bacterial vaginosis among pregnant women. In fact, these neighborhood factors account for a greater portion than individual behavioral factors.

The question is whether there is conceptual validity in the relationship between social factors and illness and whether plausible biologic mechanisms exist. How do income and other social experience translate into adverse biologic and physiologic phenomenon? Dr. Hogan presented a model that demonstrates the relationship between social factors and health. Further evidence is needed to fill the gaps in the model. The key is to identify the research needed to inform appropriate interventions.

Health Disparities

Dr. Hogan stated that health disparities and health care disparities are two very different phenomena. Disparities in health care are just one contributor to overall health disparities. As defined by the National Institutes of Health (NIH), health disparities are the differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population subgroups in the United States. Examining cause-specific mortality among infants reveals that the three main causes are birth defects, low birthweight and preterm delivery, and sudden infant death syndrome. However, attacking these causes does not guarantee that the disparities will be influenced because the main causes of the disease are not necessarily the main causes of the disparity. The causes of the disparity must be examined separately from the causes of the disease. A decline in the disparity should be accompanied by a decline in the rates, but a change in the slope of the line also is required. In other words, reducing the disease does not necessarily reduce the disparity. Furthermore, reducing the disparity might require different actions above and beyond risk/prevention models.

A number of factors contribute to disparity, including health care, behavior, culture, social factors, environmental factors, "weathering," racism, genes, economic factors, neighborhood factors, stress, and national, State, or local policies. As with infant mortality, it is important to discover which of these factors are the main contributors to health disparities. Restating that scientists recognize the significant role of social factors in contributing to health disparities, Dr. Hogan referred to Kaplan's "circles of influence" on health and asserted that social factors are significant contributors to preterm birth and health disparities. She emphasized the need to reevaluate the logic of a full focus on individual behavior, genetic factors, and health care factors to eliminate disparities.

Reductions in Infant Mortality and Preterm Birth

Dr. Hogan offered an explanation of the development of evidence-based strategies. Basic science and research must be linked with the process that begins with communities identifying disparities and generating ideas for action and ends with a professional synthesis and review of the literature to arrive at evidence-based strategies to eliminate disparities. She stated that the two processes of (1) basic science and research and (2) community/population-based intervention must be linked to produce evidence-based strategies to eliminate disparities.

Dr. Hogan commented on the notion of the "feasibility" of recommendations made to HHS. She referred to the "Roadmap to Health Disparities Project," which is based on data from CDC about the contributors to health disparities. The disparities were ranked in two ways, first by order of importance and then by order of feasibility, and a relative pattern match was created. It was

found that the correlation between importance (the importance of the factor in health disparities) and feasibility (how likely it is that the factor can be changed) is very low. Dr. Hogan stated that people tend to act on what they determine can be accomplished; therefore, feasibility tends to define what is done regardless of the importance of the factor. Dr. Hogan believes that HHS should reassess its notion of feasibility and reframe the question as "How do we make the necessary actions related to the important contributors to health disparities more feasible?" A scientific approach must be taken to eliminate disparities in infant mortality. HHS and public health agencies must partner with entities for which social change is feasible, such as communities, other government agencies, and advocates.

After referring to two logic models, one for determining contributors to preterm birth disparity and the other elucidating planning strategies to eliminate preterm birth disparities, Dr. Hogan summarized her recommendations: (1) promote a rigorous scientific approach to studying and addressing disparities, (2) support systematic development of an evidence base for disparity elimination, and (3) establish a well-funded "roadmap" to develop an evidence base for addressing social determinants of disparity. Examples of interdisciplinary projects among Federal agencies include Active Living by Design, Moving to Opportunity, lead abatement programs, asthma and housing initiatives, and environmental justice initiatives. Not all of these programs are successful, but they should be studied to arrive at an intervention that will have an impact. What is desired is a synergistic intervention that affects both individual behavior and the environmental and social influences on that behavior.

Discussion

Dr. Hogan's presentation prompted the following questions and comments:

- Dr. Hayes commented that the socioeconomic and health evidence appears to be solid, but the conclusion is that evidence is lacking for a basis on which to formulate policy decisions about disparities. She asked about the sources of the evidence and its translation into policymaking. Dr. Hogan expressed doubt that NIH is the center of the research or that the research is being conducted in a systematic way. She called for a better synergy among the agencies, with NIH as the science agency and the Centers for Disease Control and Prevention (CDC) as the prevention agency that conducts community-based intervention trials. Dr. Hogan urged SACIM to examine the synergy between these and other agencies to determine whether their work is coordinated. She stated that no agency is examining the social factors involved in preterm birth.

- Dr. Hayes pointed out that some of the potential partners in Government, such as the Departments of Housing and Urban Development, Education, and Justice, have not communicated with SACIM. Perhaps SACIM should recommend their involvement in its work. She also asked Dr. Hogan to make any missing presentation slides available to the committee. Dr. Hogan stated that her updated slide presentation would be available for dissemination to the group.

- Yvonne Bronner, Sc.D., R.D., L.D., commented that in 1899 W.E.B. DuBois came to the same conclusions set forth in Dr. Hogan's presentation and created a roadmap for achieving

the same goals. She asked Dr. Hogan for recommendations concerning Healthy Start and its programmatic mission. Dr. Hogan responded that Healthy Start offers an existing structure or framework within high-need communities and this structure can be built on. Community-based participatory efforts need the benefit of the science to inform their decisions, whereas the science is generated without the benefit of knowing the community interests and needs. The community participatory piece and the science piece must work together smoothly. Healthy Start can provide the infrastructure for carrying out this marriage between basic science and the community.

LIFE-COURSE PERSPECTIVE FOR PERINATAL HEALTH AND PRECONCEPTIONAL CARE

The panel presentation focused on the lifespan issues regarding prepregnancy and pregnancy outcome.

Pre-pregnancy Health Status and the Risk of Preterm Delivery

Jennifer Haas, M.D., M.S.P.H., Department of Medicine, Harvard Medical School

Dr. Haas presented the results of a study funded by the National Institute of Child Health and Human Development (NICHD) in San Francisco to examine the effect of prepregnancy health status on the risk of preterm delivery. The incidence of preterm delivery is rising and is twice as high among Black women as among White women. Despite extensive evaluation of the problem, an understanding of the factors associated with preterm delivery is incomplete. Several policies have been directed at improving birth outcomes, for example, expansions of Medicaid to higher income women in the 1980s and 1990s; however, the resulting programs have had a limited effect on the problem of preterm birth.

The hypothesis of the NICHD work was that the focus on the prenatal period is too narrow—it is too late to modify health behaviors, identify and treat chronic illness, identify and treat chronic infection, and improve overall maternal health status. The goal of Project WISH (Women and Infants Starting Healthy) was to examine the relationship between a woman's prepregnancy health status and her risk of subsequent preterm delivery. Dr. Haas explained the establishment of a longitudinal cohort of women enrolled between May 2001 and July 2002. The women participated in up to four telephone interviews: (1) before 20 weeks (the women were asked to recall their health status during the month before conception), (2) 24 to 28 weeks, (3) 32 to 36 weeks, and (4) 8 to 12 weeks postpartum. The researchers also reviewed the women's medical records to obtain the best estimate of gestational age and determine the adequacy and content of prenatal care and health conditions that occurred both before and during pregnancy. Dr. Haas provided some detailed information about the main measures for the study, including maternal health status, detailed sociodemographic information, and chronic illness and medication use.

The main outcome variable was preterm delivery, defined as less that 37 weeks gestational age. The researchers looked at a variety of independent variables, including age, race/ethnicity, country of birth, marital status, educational attainment, economic deprivation, parity, exercise before and during pregnancy, prepregnancy body mass index (BMI), chronic conditions, pregnancy-associated complications, tobacco use, content of prenatal care, physical function, and depression. The study used the perinatal health framework and focused on distal determinants of preterm delivery (demographic and socioeconomic characteristics) and proximal determinants of

preterm delivery (biomedical conditions and behavioral practices). Dr. Haas described the use of a series of three logistic regression models and stated that the response and retention rates for the study were high. The final sample comprised 1,619 women with a median age of 30 years. After reporting the racial and ethnic distribution (35 percent Latina, 32 percent White, 18 percent Black, and 15 percent Asian) and the educational attainment of the sample, Dr. Haas stated that the rate of preterm delivery in the sample was 8 percent.

Dr. Haas described data from the study that indicated changes in health status during pregnancy involving physical function and vitality and changes in depressive symptoms. She also discussed the findings of the multivariate models. African American women in the cohort had about twice the odds of preterm delivery compared with White women, and women with low socioeconomic status were more likely to have a preterm delivery. Adjusting for the risk factors that occurred before pregnancy, the second model shows that poor physical function, chronic hypertension, other chronic conditions, and smoking were significantly associated with preterm delivery, but depressive symptoms and lack of exercise were not. After adjustment for both prepregnancy health status and prenatal factors, the third model shows that none of the racial/ethnic groups had a significantly increased risk of preterm delivery compared with White women, and prior poor physical function, chronic hypertension, pregnancy-associated hypertension, and other pregnancy conditions were significantly associated with preterm delivery.

The researchers considered what percentage of the variation of preterm delivery was associated with each of these three groups of factors: demographic characteristics, prepregnancy characteristics, and factors that occurred only during pregnancy. It was found that demographic characteristics explained relatively little of the variation in preterm delivery after accounting for the various types of characteristics; for example, race/ethnicity, education, and age explained only 13 percent of the variation in preterm delivery. Prepregnancy health factors (both health status variables and chronic health conditions) explained 40 percent of the variation in preterm delivery. The remaining 47 percent of the variation was explained by conditions that occurred or health status that was reported during pregnancy. Therefore, although factors that occur during pregnancy explained the majority of the variation, factors that occur before pregnancy explained a substantial amount of the variation.

After citing some of the limitations of the analysis (the retrospective recall of prepregnancy health; the observational, not causal, nature of the data; and the focus on maternal health in the immediate preconception period), Dr. Haas concluded that maternal health status, specifically physical function, before pregnancy is associated with the risk of preterm delivery, and improving the rates of preterm delivery might require attention to the health status of women before pregnancy, even during the fairly immediate preconception period.

A Snapshot of Preconceptional Health: Thoughts on What We Know, What We Don't…and Where We Go From Here

Merry-K. Moos, R.N., F.N.P., M.P.H., FAAN, Professor, Maternal-Fetal Medicine, School of Medicine, Adjunct Associate Professor, School of Public Health, University of North Carolina

Ms. Moos noted that her slide presentation is somewhat different from the one in the meeting notebook and that members can request the updated presentation by e-mailing her at mkmoos@med.unc.edu.

Ms. Moos's presentation reflected on the scientific evidence about preconceptional health promotion content and process, examined the scope of what is still unknown, and identified some structural and policy changes in the current approach to the care of women with the potential to affect reproductive outcomes. She argued that an integrated, rather than a categorical, approach to women's reproductive health is needed.

After defining preconception, periconception, and interconception, Ms. Moos stated that the two leading causes of infant mortality in the United States (low birthweight and preterm birth) are relatively immune to the major prevention strategy of prenatal care. The dominant perinatal prevention paradigm features a categorical focus with little integration with a woman's preexisting care or with her future health care needs. The prevention strategy is initiated at the first prenatal visit with a risk assessment, health promotion and disease prevention education, and a prescription for prenatal vitamins, and it ends with the postpartum visit. Ms. Moos noted that 50 to 75 percent of women do not return for the postpartum visit, which is routine, low intensity, and generally boilerplate. This visit is framed as the end of prenatal care rather than the doorway to prevention for the woman, her future health, and the health of her future babies. The current system is episodic, disjointed, inefficient, and often ineffective.

Many pregnancy outcomes are determined before the obstetrical provider meets the patient. These outcomes include intendedness of conception, spontaneous abortion, abnormal placentation, congenital anomalies, and timing of the first prenatal visit. Moving the content of the first prenatal visit to a time before pregnancy might afford an opportunity to affect primary prevention. Ms. Moos asserted that preconceptional health promotion provides a pathway to achieve primary prevention and is not a new idea.

The objectives for preconceptional health promotion are to improve women's wellness, increase the intendedness of pregnancy, educate women and their partners about risks, and decrease amenable risk factors. The best evidence of the benefits of preconceptional interventions concerns diabetes. The tight control of diabetes in the periconception period results in a decreased incidence of congenital anomalies. However, we do not know how to reach women with diabetes with this primary prevention message to help them make informed decisions about their health and that of their future children. Similarly, we know that high phenylalanine levels are associated with poorer reproductive outcomes and reductions in those levels are associated with improved outcomes. However, we do not know how to reach the approximately 3,000 women of child-bearing age in the United States who need this information. We also do not know how to help affected women obtain and adhere to the very restrictive diet. Another example involves folic acid, which protects against neural tube defects. Success in changing the knowledge, attitudes, and behaviors of women of childbearing age and of health care providers regarding folic acid has been discouragingly low.

On the topic of intendedness of conception, Ms. Moos stated that as many as 50 percent of pregnancies are unintended and the rate is likely to rise. We do not know how the largely

attitudinal construct of desiring a pregnancy intersects with the behavioral construct of planning for a pregnancy and the degree to which either of these constructs affects positive periconceptional behaviors. Ms. Moos asserted that if unintended pregnancy is an epidemic in the United States, then preconceptional health should not be built around a special visit that requires women to determine that they are planning to become pregnant. Unless something far more fundamental is changed, 50 percent of the women will be missed.

In a broader sense, major determinants of poor health status in women are also important risk factors for poor pregnancy outcomes. Therefore, a life-course approach to prevention is likely to better serve the health of women, fetuses, and infants. Giving women information about how to improve their health status will result in healthier women becoming pregnant. For example, obesity and tobacco use are major problems for women's health whether or not they become pregnant. We do not know whether we can effectively alter lifestyle and other risks before conception to positively affect a woman's long-term health status and risk to her future pregnancies. In addition, we do not know how to implement or take to scale the effective interventions available today.

Ms. Moos offered some thoughts on moving toward a life-course perspective in three areas: promoting an integrated approach to reproductive health care, promoting intendedness of pregnancy, and promoting women's wellness. If these three elements could be affected in the structure of care, a tremendous difference could be made in infant mortality. Integrated care incorporates linkages between childbearing and women's health during the lifespan. An integrated continuum model shows that each event in the health care of a woman who might at some point conceive should be integrated with all that is known about the woman's health needs and risks from previous encounters with the health care system. The sum of the knowledge gained from previous encounters should inform a plan of care for health promotion, disease prevention, health education, and specific treatment recommendations. The goal of providers who use this model is to promote the health of the woman as well as any pregnancies or children she might have. Because they aim to do this at each encounter with the woman, the model is termed "opportunistic." Ms. Moos asserted that a meaningful continuum must be conceptualized and operationalized to overcome traditional boundaries.

Promoting integrated services means avoiding the creation of new silos that offer categorical services. Promoting integrated services also involves testing innovations to facilitate integrated care. An example of such an innovation is use of a computer program to track health profiles across the lifespan; however, because the system does not yet allow computers to speak to one another, a simple wallet-size health profile card could be used instead. Another important consideration is that clinical and financial access to specialty services must be provided for high-risk women and families. In addition, to promote intendedness of future conceptions, all negative pregnancy tests should be addressed immediately with family planning care or preconceptional counseling. A reproductive life plan approach should be stressed for all women to dissuade them from the idea that childbearing occurs by chance rather than active choice. Social marketing and public health education are needed to help empower women to appreciate the factor of choice.

Ms. Moos suggested that SACIM encourage a concerted effort of collegiality to address these issues. For example, the Women, Infants, and Children (WIC) program should include

interconceptional messages in its counseling of postpartum women. Well-baby visits are another doorway for encouraging women to consider birth spacing and referring women with special-needs infants to more intensive services. Pharmacists are another doorway to reach women with epilepsy or diabetes to educate them about prevention opportunities. In addition, the annual visit should be replaced with something more descriptive and empowering, and it should be called "the well-woman visit." Reimbursement for well-woman exams should be tied to demonstrations of health promotion and disease prevention counseling.

Ms. Moos summarized her presentation by referring to the strong rationale for the preconceptional health promotion agenda. The research supports the benefits of preconceptional health promotion. Relatively little is known about successful strategies for promoting high levels of preconceptional wellness. Promoting high levels of health in all women will result in preconceptional health promotion for those who become pregnant. Ms. Moos ended her presentation by asserting that more women can achieve the wonder of a healthy and happy birthing day if we expand on what we know, explore what we do not know, and build a new paradigm for prevention that overcomes episodic, disjointed services and focuses on a high level of health for all women. The result will be lower rates of poor reproductive outcomes.

Using a Lifecourse and Multiple Determinants Approach To Address Healthy Weight in Women

Holly Grason, M.A., Associate Professor, Population and Family Health Sciences, Johns Hopkins Bloomberg School of Public Health

Ms. Grason's presentation, while focusing on healthy weight in women and the issue of obesity in perinatal outcomes, illustrated the way in which a lifecourse and multiple determinants model of perinatal health can be applied or translated in a public health context. The rationale behind a perinatal framework is that (1) powerful influences on pregnancy outcome occur long before pregnancy begins and involve such factors as nutrition, chronic disease, and sexually transmitted infections; and (2) many pregnancies in the United States are unintended. The framework also takes into account the multiple determinants (social, behavioral, environmental, and biological) that interact to shape pregnancy outcomes. The model integrates multiple individual factors, shows interrelationships between factors, and illustrates pathways by which factors might influence outcomes.

The lifecourse extends from early childhood to adolescence, young adulthood, midlife, and menopause. The preconceptional period is relatively large. The perinatal health framework includes distal risk factors and proximal risk factors, which entail processes and outcomes. Another aspect of the perinatal framework involves the way in which it encompasses dramatic changes in the demography of pregnancy. For example, the occurrence of chronic conditions and diseases that might affect pregnancy outcomes increases with age. The prevalence and sequelae of obesity and overweight also increase with age. In addition, shorter interconceptional periods have implications for women's health.

Regarding the epidemiology of women and weight, Ms. Grason stated that overweight and obesity have increased over the past 25 years. Pregnancy can contribute to obesity in women and hence future morbidity and mortality, and obese women are at increased risk for maternal

morbidity and mortality. After providing information to support these assertions, Ms. Grason addressed the system challenges: (1) too little intervention because of the primary focus on clinical care, (2) a lack of emphasis on prevention in the areas of obesity and tobacco use, and (3) the fragmentation that results from medical specialties and the silo approach.

Ms. Grason expressed her hope that the strategies that have emerged from the perinatal framework will help policymakers as well as practitioners to organize the available information, discover the gaps in knowledge, and integrate the pieces. She referred to a figure that depicts the lifespan approach to safe motherhood intervention as applied to obesity. The distal risk factors are genetic factors, physical environment factors, and social factors. The proximal factors are biomedical and behavioral risk and the processes, which include pre- and interconceptional care, pregnancy care, and postnatal care. The age spectrum moves from childhood to 30 plus years of age. The figure includes sets of strategies that are implemented, could be implemented, could be extended, and so on. A number of generic strategies are common to public health agencies: information strategies, administrative strategies, financing strategies, provider strategies, nongovernmental strategies, and environmental strategies. Ms. Grason gave examples of categories of information strategies: interventions to package information differently, using different venues for communicating information to women across the lifespan, information transfer across health specialties for individual women and over time, and data-driven policy change. Administrative strategies might involve changing current categorical, disease- and population-defined organizational schemes, and practices of State and local health agencies. Provider strategies might focus on medical school training with respect to knowledge base and process, more comprehensive guidelines for postpartum care, and changes that do not depend on medical professionals.

Referring to the figure, Ms. Grason explained obesity-related strategies by life stage. For young girls, an environmental strategy might be to make neighborhoods safe and amenable for physical activity. A provider strategy might be to increase the pediatrician practice of taking family histories. An administrative strategy might be to focus on food policies and education in daycare and preschool settings. Provider strategies for adolescent girls might begin to focus on a women-centered information transfer approach and relay pediatric histories to family practice and internal medicine physicians and reproductive health providers. In school settings, peer support groups could be introduced. For young women in their 20s, one provider strategy might be to expand the provider base for health interventions to include coaches and staff at athletic clubs or gyms. Another provider strategy might be to ensure information transfer across providers and over time. A third provider strategy would be to tailor chronic disease management to pregnancy.

Opportunities for linking public health strategies with the perinatal framework include the growth of consumer-directed health plans, national attention to nutritional health and physical fitness, health education and promotion in schools, and exemplary model strategies in team care, integrated women's care, community outreach, and delivery efforts. Policy directions include maximizing the stakeholder position of employers and industry; improving the use of local, State, and Federal governments as models of workforce health promotion; and using performance measures as incentives to adopt evidence-based practices and models. Practice directions involve integrating tools of quality improvement and model strategies, creating teams

in health care delivery, exploring group visits for care and support systems, and adopting electronic and technological tools to support the provision of quality care.

Ms. Grason concluded her presentation by stating that the lifespan approach demands attention to consistency and continuity with respect to health information and health care. As continuity of care no longer appears possible, patient-based approaches complemented by population-based approaches to reach women across the lifecourse are critical.

Preconceptional Care: Missed Opportunities To Improve Pregnancy Outcomes
Hani Atrash, M.D., Deputy Director, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention

Dr. Atrash stated that work on preconceptional care has been ongoing for at least 30 years. The Advisory Committee on Preconception Care of the American College of Obstetricians and Gynecologists recently emphasized the importance of improving preconceptional health. Preconceptional care can be defined as a set of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management, emphasizing those factors that must be acted on before conception or early in pregnancy to have a maximal impact. Preconceptional care is necessary because early prenatal care is not enough and, in many cases, is too late. Dr. Atrash pointed out that improvements in maternal and infant mortality rates have slowed down. From 1980 to 2002, the proportion of babies born with low birthweight increased by 14.7 percent, and the proportion of babies born with very low birthweight increased by 25.9 percent. The proportion of babies born preterm increased by 26 percent and continues to increase according to 2003 data.

From 1960 to 2002, there was a shift in the leading causes of infant mortality. In 1960, complications of pregnancy were not even among the 10 leading causes. In 1980, they became the fifth leading cause. In 2002, they were the third leading cause of infant mortality. In that year, almost 31 percent of pregnant women suffered complications in their pregnancies. Furthermore, a high prevalence of factors that contribute to adverse pregnancy outcomes is found in both pregnant and nonpregnant women. These risk factors include smoking, alcohol use, preexisting medical conditions, rubella seronegative, HIV/AIDS, and inadequate prenatal care. In women at risk of getting pregnant, 3.8 percent are diabetic, 2.6 percent are on teratogenic drugs, 30.8 percent are obese, and 69 percent are not taking folic acid. By the time a woman seeks early prenatal care, it is too late to manage many of these risk factors. Dr. Atrash concluded that the continuing high levels of risk factors for adverse pregnancy outcomes among pregnant and nonpregnant women, together with the shift in the leading causes of infant death, indicate a need to modify current strategies to reduce infant mortality by placing more emphasis on preventive measures implemented during the preconception period.

After a brief update on the current status of preconceptional care in the United States, Dr. Atrash stated that, although evidence, consensus, and guidelines exist for preconceptional care, there are challenges to its implementation. The absence of a national policy related to preconceptional care is one such obstacle. Both public policy and organizational policy are lacking to support the implementation of guidelines and recommendations for preconceptional care. Clinical tools, such as screening tools, protocols, knowledge paths, and benchmarks, also are lacking. Furthermore,

there are few proven delivery models and programs to demonstrate the way in which to integrate the interventions into bundles and packages for delivery. In addition, provider and consumer education on preconceptional care is inadequate.

In September 2003, a group of CDC scientists established a workgroup to study the various aspects of preconceptional care and explore how CDC, working with its partners, could support efforts leading to preconception health and ultimately to improved perinatal outcomes. A June 2005 national summit was called to discuss the current state of knowledge regarding preconceptional care. At the same time, CDC convened a select panel of interdisciplinary experts to develop recommendations and action steps for improving the health of women, children, and families through advances in clinical care, public health, and community action.

The purposes of the CDC Preconception Care Initiative are to develop national recommendations to improve preconceptional health; improve provider knowledge, attitudes, and behaviors; identify opportunities to integrate preconceptional care programs and policies into Federal, State, and local health programs; develop tools and promote guidelines for practice; and evaluate existing programs for feasibility and demonstrated effectiveness. The accomplishments of the initiative include establishing the CDC internal and external workgroups, convening a meeting of workgroups, holding a National Summit on Preconception Care, convening a select panel, developing recommendations to improve preconceptional health, and commissioning a supplement to the *Maternal and Child Health Journal.*

Dr. Atrash announced that CDC's next steps will be to publish and disseminate the recommendations; increase awareness among public and private providers; identify opportunities to integrate preconceptional care programs and policies into State, local, and community health programs; develop tools and guidelines for practice; and evaluate existing programs for feasibility and demonstrated effectiveness.

The Summit presentations and subsequent expert panel deliberations resulted in the development of a refined definition, a vision, and four goals and the identification of 10 recommendations with action steps. Dr. Atrash explained that the preconceptional care framework is designed as a functional pyramid whose base is the action steps that lead to achievement of the recommendations, which leads to achievement of the goals, and finally to the pinnacle of the pyramid—improvement of women's health and pregnancy outcomes. The discussions of the select panel were developed around five themes: (1) social marketing and health promotion for consumers, (2) clinical practice, (3) public health and community, (4) public policy and finance, and (5) data and research. The goals, recommendations, and action steps form the strategic plan for improving preconceptional health. They fit within the context of a combined ecological and lifespan framework that recognizes the unique contributions and challenges faced by women, families, communities, and institutions.

After describing the components of the vision for improving preconceptional health and pregnancy outcomes, Dr. Atrash stated that the recommendations are based on four overarching goals identified as critical for women to reach optimal health and realize their reproductive goals. The four goals are to (1) improve the knowledge, attitudes, and behaviors of men and women related to preconceptional health; (2) ensure that all U.S. women of childbearing age receive

preconceptional care services that will enable them to enter pregnancy in optimal health; (3) reduce risks indicated by a prior adverse pregnancy outcome though interventions in the interconception period that can prevent or minimize health problems for a mother and her future children; and (4) reduce the disparities in adverse pregnancy outcomes. The first two recommendations, which involve the lifespan and consumer awareness, focus on the individual responsibility for the preconceptional care actions. Recommendations 3 to 6, which involve preventive visits, interventions for identified risks, interconceptional care, and prepregnancy checkups, focus on the actions related to improving the provision of health care services. Recommendations 7 and 8 involve health coverage for low-income women and public health programs and strategies. Recommendations 9 and 10 involve research and monitoring improvement.

To promote preconceptional care, Dr. Atrash suggested that SACIM recommend to the Secretary that (1) States be permitted to use family planning waivers for interconceptional care, (2) coverage of more uninsured women be permitted through the use of Medicaid and the State Children's Health Insurance Program (SCHIP), and (3) public health agencies be directed to use resources to develop programs, test models, and fill gaps as well as to evaluate and monitor progress.

Discussion

The presentations by the panelists prompted the following comments and questions from SACIM members:

- Joyce Roberts, C.N.M., Ph.D., asked for input about successful models of integrated care because the existing system is very fragmented. She pointed out that one of the proposals is to integrate the components of care, but other recommendations involve strengthening some of the existing programs to make them more comprehensive. She asked whether the best strategy is to build bridges among the existing silos or whether an integrated model merits consideration. Ms. Moos responded that demonstration projects are needed to examine proposed integrated models. She described North Carolina's Healthy Start Plus program, in which women participate in a care coordination model that addresses the issues contributing to their previous poor pregnancy outcomes. This program offers a public health model with medical, social, and ecologic elements. Ms. Moos added that the Healthy Start Plus program raised a marketing issue when some of its enrollees shunned the idea of being identified as at high risk for future poor pregnancy outcomes. The conclusion is that the intervention should be framed in terms of women's wellness instead of risk factors. Ms. Moos also stated that she is wary of reinforcing the silos even though they are a reality. Dr. Atrash pointed out the need to test various models and build on and strengthen existing silos. The challenge is to shift the focus over time from high-risk populations to well-women's health, but that change will not take place for several years. Ms. Moos remarked that professionals should be educated to cover preventive issues in routine visits. She noted that about 70 percent of reproductive-age women have a routine visit each year and opportunistic care can address life issues with a preventive focus. Dr. Atrash added that expanding coverage in the postpartum period can result in better outcomes for women and babies.

- Dr. Hayes remarked that the information presented by the panelists can inform the papers written by the subcommittees. For example, adequate financing is needed for the components of medical preconceptional care. She added that opportunities to apply what is known about preconceptional care do not readily exist because of the failure of many women to enter the system. Bridges must be created between silos, but a maintenance schedule for women's health also must be created. Furthermore, the absent partners in this endeavor are primary care providers and pediatricians. In addition, a change must occur in how women perceive the importance of health, and women must be informed about the consequences of their preconceptional behavior. For example, polls on obesity show that the primary reason women want to lose weight is related to appearance, not health. These significant challenges are evidence of the need for nontraditional approaches along a continuum instead of merely during the 9 months of pregnancy.

- Dr. Hannemann complimented the panelists on their extremely comprehensive coverage of the topic and referred to CDC's recommendations for research. He asked whether there was an attempt to coordinate the CDC recommendations with the Coordinating Council's recommendations to the Secretary. Perhaps the fact that two groups have made recommendations in this area would reinforce to the Secretary the importance of the proposed research effort.

- Dr. Frigoletto suggested that preconceptional care should begin much earlier than the model presupposes. The educational model can accomplish goals earlier, better, and with much less expense than the medical model; however, barriers will prevent a smooth transition from the medical model to the educational model. Dr. Frigoletto suggested that programs centered on healthy lifestyles could effectively deliver information about preconceptional care beginning at age 12. The model that resulted in reducing the teenage pregnancy rate should be exploited to provide intervention practices to deliver education on healthy lifestyles to prevent preterm birth and low birthweight. Christina Ryan, R.N., M.P.A., and Dr. Atrash raised the issue of the target audience for various messages about healthy lifestyles. CDC is committed to increasing the visibility of the issue of progressing from a curative model to a preventive model and all of the challenges involved in this change, including educating providers, consumers, policymakers, politicians, and insurance companies. Dr. Atrash asked for input from the SACIM members on this topic.

- Ms. Moos stated that the paradigm cannot be changed exclusively through the medical world or through a social perspective. She cited a Canadian study that showed that efforts aimed at consumer awareness and knowledge, combined with clinicians' reinforcement, markedly changed the likelihood of women's use of folic acid. The change to a new paradigm is challenging. Ms. Moos stated that local health departments have proven most responsive to the prevention opportunity by implementing programs for preconceptional health promotion in family planning clinics.

- Yvonne Moore, M.D., stated her appreciation for the comments on educating health providers. Providers have an opportunity to screen patients with a family history of diabetes, cardiovascular disease, or thyroid disease, for which there are codes. Therefore, preconceptional counseling can be done without "breaking any of the rules."

- Kevin Ryan, M.D., M.P.H., thanked the panel members for their excellent presentations and thanked Ann Koontz, Dr.P.H., C.N.M.; and Drs. van Dyck and Collins for their consistent delivery of national experts to address the issues pertinent to SACIM. He asked for the panel's feedback about an issue discussed in the Subcommittee on Improving Clinical and Public Health Practice. Noting that a cogent marketing strategy depends on a consensus term, such as "preconceptional health" or "well-woman's health," he asked for the panel's thoughts about the best terminology to use when addressing this issue. Dr. Haas responded that the American health care system is not really structured, in terms of financing or organization, to focus on health promotion for all populations. The country woefully underfunds health care and undervalues health. Until those silos are broken down, the United States will not catch up with any of the other industrialized countries in this regard. Dr. Atrash stated that preconceptional care will probably happen within a few years to improve infant mortality and pregnancy outcomes for both mothers and babies. He noted that improvements in women's health, although supported by numerous Offices of Women's Health, depend on substantial resources that have not been forthcoming.

- Patricia Daniels, M.S., R.D., from the United States Department of Agriculture (USDA), commented on the consumer component of the issue. Preconceptional health is important, but the country would experience more success with its health education messages if they recommended very clear actions. USDA met with little success in implementing its nutrition messages until it teamed with the Dietary Guidelines effort and began to look at people holistically. She cautioned SACIM about its tendency to fall back on the medical model even as it declares its intention to do otherwise.

UPDATE ON SUBCOMMITTEES' INTERIM ACTIVITIES AND COMMITTEE FEEDBACK

In the absence of any public comments, Dr. Collins called on the subcommittee chairs to give a synopsis of their groups' activities. The purpose of the reports was to solicit feedback from the larger group, especially regarding areas of overlap.

Subcommittee on Eliminating Health Disparities

Yvonne Bronner, Sc.D., Chair

Dr. Bronner acknowledged the members of the health disparities subcommittee: Renee Barnes, M.S., R.N.; Dr. Collins; Ms. Frazier; Dr. Frigoletto; Dr. Miller; Robert Sapien, M.D.; and Mary Lou de Leon Siantz, Ph.D., R.N. She also thanked Madelyn Renteria, a staff member from the Maternal and Child Health Bureau (MCHB), for her assistance. Dr. Bronner reported that the subcommittee held three conference calls in the period between the July and November meetings. Members selected the following topics of interest for investigation: stress and depression, male involvement (Dr. Sapien), substance abuse, racism, obesity and preterm birth (Dr. Frigoletto), unequal treatment in health care services, environmental issues, and contextual issues. The challenge for the subcommittee is to focus all of this work into the report that is due March 1.

To help with an understanding of the disparities, Dr. Bronner showed slides that illustrated the gap in health disparities and stated that the group will focus on factors responsible for the gap

other than medical reasons. The slides displayed the gaps in infant mortality rates involving areas such as educational level, low birthweight, period of gestation, trimester of pregnancy at which prenatal care began, age of mother, marital status, mother's place of birth, and maternal smoking during pregnancy.

The subcommittee's goal is to answer the following questions:

- What programs have a mandate to affect the identified ethnic disparity factors?
- How can these programs be more effective in their mission?
- Which Healthy People 2010 objectives should be examined relative to ethnic disparity?
- What recommendations should be made?

Discussion

- Dr. Guyer pointed out that Dr. Haas's presentation included some data that relate to this issue. Her information on demographics, prepregnancy risk, and prenatal factors shows that, although race is related to preterm birth in the earlier models, it falls out as a significant predictor of preterm birth. Therefore, the effect of race probably works through either chronic hypertension, pregnancy-associated hypertension, or other pregnancy-related conditions. Dr. Collins observed that Dr. Haas's sample size must have been small to yield the odds ratios displayed in the models.

- Dr. Frigoletto asked a question about Dr. Bronner's slide showing that infant mortality in Blacks after 37 weeks remained high. He emphasized that the reference is to infant mortality, not perinatal mortality; causes other than preterm and low birthweight might be involved. Dr. Collins noted that the numbers are driven by SIDS and injuries.

Subcommittee on Maternal and Child Health Funding and Financing
Jennifer M. Cernoch, Ph.D., Chair

Dr. Cernoch acknowledged the subcommittee members: Dr. Arrington; David Ray Baines, M.D.; Ronald Finch, Ed.D.; Dr. Roberts; and Betty Tu, M.D., M.B.A. She also thanked James Resnick from the MCHB staff for his guidance. Dr. Cernoch explained that the subcommittee decided not to focus on the very large areas of eligibility and reimbursement; instead, its goals are to examine (1) the basic MCHB services, (2) prevention services, and (3) models of innovation. The focus is on four priorities: (1) to maintain the core functions of the Medicaid program, (2) to develop strategies to preserve the Title V maternal and child health block grant, (3) to promote the medical home concept for expectant families for coordination of care, and (4) to improve health and information technology for maternal and child health services.

The subcommittee has had one conference call since the July meeting. The group has been in transition since the naming of a new chairperson.

Discussion

- Dr. Collins recognized the work of the subcommittee in developing the four priority areas, especially with only three active participants. He suggested that the committee address the

overlap between the topic of financing and the work of the other two subcommittees. Dr. Cernoch agreed that the group needs more than three members and that financing and funding affect the other subcommittees and many other areas as well. The question is whether the financing and funding subcommittee should develop a global report on basic services, preventive services, and innovative models and then contribute a section on financing issues to each of the other reports. The problem with this approach is that the other subcommittee reports would have to be completed before the financing sections could be added.

- Dr. Hayes commented that the funding and financing piece is very relevant because of the proposed budget cuts, which could be devastating to the States. Her opinion is that a statement on financing is very urgent. Funding and financing should be preserved as a separate focused component.

Subcommittee on Improving Clinical and Public Health Practice
Kevin Ryan, M.D., Chair

Dr. Ryan recognized the members of the subcommittee: Dr. Guyer; Dr. Hannemann; Dr. Hayes; C. Renee Elmen Hollan, R.N.; Dr. Moore; and Ms. Ryan. He thanked MCHB staff member Ms. Johannie Escarne for her support. Dr. Ryan explained that, at the first meeting of the subcommittee, the members developed three main priority topics: (1) supporting the lifespan approach to improving birth outcomes, (2) reengineering vital statistics for the 21st century, and (3) improving the quality of care. The subcommittee currently thinks of each of these topics as an individual report. Dr. Ryan noted that this meeting's presentations were very helpful in providing information on the priority areas.

Dr. Ryan outlined the challenges in regard to each of the priority areas:

- *Lifespan approach.* While agreement exists that social determinants are a significant component of positive birth outcomes, the committee's charge is to make practical and implementable recommendations to the Secretary. The problem is that because social determinant issues tend to become very broad very quickly, the subcommittee is struggling with the challenge of producing implementable recommendations. Dr. Ryan mentioned that one such recommendation involving preconceptional care might be for Medicaid waivers to expand eligibility for family planning services. He suggested that the subcommittee might develop both vision statements and practical recommendations.

- *Reengineering vital statistics.* The subcommittee members agree that the Wal-Mart approach is desirable in this regard. Having the ability to examine fresh statistics is important, but it presents many challenges given the existence of 50 different jurisdictions. Dr. Guyer will take the lead on this issue and request recommendations and position papers from the National Association for Public Health Statistics and Information Systems (NAPHSIS) and NCHS as an adjunct for the subcommittee's deliberations.

- *Improving the quality of care.* The subcommittee generated a broad spectrum of specific issues that relate to quality of care. The challenge is to narrow them down and move from an

outline of the topics to full reports in the proposed timeframe. The group process has been global thus far.

Discussion

- Dr. Guyer referred to two draft letters, one to NAPHSIS and one to NCHS, and asked about the process for finalizing and sending them. Dr. van Dyck responded that Dr. Collins can send the letters from the committee. Dr. Collins asked Dr. Guyer to forward the letters to Dr. Koontz, who will forward them, after review, to Dr. Collins.

Before the subcommittee breakout sessions, Dr. van Dyck reminded the chairs about the task for the following day, namely, to present a general idea of an outline for the reports. In response to a question from Dr. Bronner about the March 1 deadline, Dr. van Dyck stated that the deadline will be discussed during the business meeting on the following day.

Dr. Collins announced that the next SACIM meeting is scheduled for July 13–14, 2006.

The General Session adjourned at 4:20 p.m., at which time the subcommittees met in breakout sessions.

WEDNESDAY, NOVEMBER 30, 2005

COMMITTEE BUSINESS: SUBCOMMITTEES' REPORT-OUT AND DISCUSSION OF SUBCOMMITTEES' DIRECTION

James W. Collins, Jr., M.D., M.P.H., Associate Professor of Pediatrics, Northwestern University Medical School, Chairperson, SACIM

After several hours of subcommittee meetings, the participants reassembled to hear the subcommittee reports.

Report of the Subcommittee on Eliminating Health Disparities

Deborah L. Frazier, B.A., R.N., Director, Arkansas Health Services Permit Agency

Reporting for Dr. Bronner, Ms. Frazier presented the subcommittee's vision statement—the elimination of disparities in infant mortality. She stated that the problem statement and rationale in the subcommittee report will be taken from the language in the presentations by Drs. Hogan and Camara P. Jones. The subcommittee defined three priorities or goals:

1. Ensure full funding for Healthy Start models at all Healthy Start-eligible sites to include an expanded focus on social, economic, environmental, and lifestyle factors.

2. Increase funding for research on the impact of lifestyle issues and behavioral and social determinants contributing to the gap in infant mortality.

3. Conduct a conference that focuses on racism and social and economic factors contributing to the gap in infant mortality.

In terms of program and policy implementation, Healthy Start is a model that has demonstrated some success in health education and case management in select communities across the country. The first goal calls for expansion of the model to other communities to affect the disparities in infant mortality. The second goal, additional funding for research, will result in increased knowledge about the impact of social determinants and lifestyle factors on infant mortality. The third goal aims to bring together providers and policymakers to discuss racism and the social and economic factors that contribute to health disparities in general and disparities in infant mortality in particular.

The subcommittee has devised a plan whereby three subgroups will be created to develop the three goals, with a due date of January 31. Conference calls and continued discussion will take place, and the first draft of the report will be due in mid-March.

Subcommittee on Improving Clinical and Public Health Practice
Kevin J. Ryan, M.D., M.P.H., Chief, Women's and Children's Health Section, Division of Public Health, North Carolina Department of Health and Human Services, Subcommittee Chair

Dr. Ryan reported on the subcommittee's deliberations on the statement of the problem. The historical progress in birth outcomes has come to a stop; the past few years have seen minimal improvements, and most recently there has been a small increase nationally in infant mortality, with cumulatively more significant increases in low birthweight rates. Much of the progress in improving birth outcomes is due to neonatal intensive care-based "rescue operations" of very ill and often very premature infants. The latest evidence shows that those interventions that have been effective in improving infant mortality over the past two decades are reaching the limits of their ability to continue to contribute to infant mortality reduction. Furthermore, access to prenatal care, although important, is not a "magic bullet" and will not guarantee further progress in improving birth outcomes.

The subcommittee also is interested in the changing epidemiology of pregnancy; this issue deserves more research and understanding. The role of maternal complications as a cause of infant mortality is very important. Infant mortality is related to several preconceptional factors, such as diabetes, hypertension, obesity, unintendedness, smoking, and a sedentary lifestyle. All of these factors cannot be addressed with the start of prenatal care; they are antecedent, lifecycle issues, some of which start as early as childhood or adolescence. These issues must be addressed before the onset of pregnancy. In addition, social and economic factors are powerful determinants of birth outcomes.

The Nation must think in terms of a paradigm shift to improve birth outcomes. The temporal axis, which traditionally begins with the early prenatal visit 6 weeks after conception and concludes 6 weeks after the end of the pregnancy, needs to be expanded. High-quality prenatal services are important, but good birth outcomes demand that the effort begin much earlier than the start of pregnancy and continue with interconceptional services. Another axis that must be expanded concerns traditional medical interventions as the core issue related to good birth outcomes. Because social and economic factors also are very influential, a broader spectrum of activities should be supported.

The subcommittee drafted the following life-course recommendations:

- *Childhood and adolescence.* Education should play a role in promoting healthy lifestyles and smoking prevention. A demonstration project using changes in curriculum can benefit the health of a child as well as her academic performance. In addition, schools can be used as a vehicle for increasing physical activity.

- *Preconceptional care.* The potential to move birth outcomes in a positive direction exists in preconceptional care. Effective strategies must be identified and promoted to provide evidence-based preconceptional care. A number of interventions in preconceptional care are science-based (e.g., folic acid), but the challenge is to deliver the message to consumers. In

addition, primary care providers and specialists must be reeducated about the benefits of these interventions.

- *Family planning.* The Secretary should make expansion of Medicaid eligibility a State option rather than a waiver. Family planning services should not be conceived of in a very narrow sense as birth control pills or Depo-Provera; instead, they should include appropriate preconceptional activities. Increased access to emergency contraception also should be available, along with age-appropriate family planning counseling.

- *Pregnancy.* Some evidence-based standards are incompletely implemented in practice. Effective means of ensuring adoption of evidence-based practices should be identified and promoted to improve the quality of prenatal care.

- *Interconceptional period.* Strategies should be devised to encourage universal postpartum visits because a high percentage of women fail to return for these visits. Such strategies might include the use of office-based recall tools, a reconsideration of the timing of postpartum visits, finding appropriate providers of the service beyond obstetricians, and the enlistment of pediatricians and family practice physicians for referral. Coverage for the mother should be provided beyond the 6- to 8-week period. In addition, family planning services and preconceptional care are relevant in the interconceptional period.

The subcommittee also discussed the need to promote excellence in clinical service provision. A variety of strategies, such as pay for performance and incentivizing high-quality performance, can ensure the universal adoption of evidence-based practices. Social marketing can further the understanding of the new paradigm involving healthy pregnancy and women's wellness in general. In addition, the subcommittee discussed the issue of reengineering vital statistics. A shorter paper might cover the promotion of the accuracy, timeliness, and quality of vital statistics, with input from NCHS and NAPHSIS. The paper would include recommendations on the issue of vital statistics and the use of data to promote a variety of good birth outcomes.

In response to a question from Dr. Roberts about computer-based records, Dr. Ryan explained that the subcommittee on practice is interested primarily in the issue of the timeliness of vital statistics, not in electronic medical records.

Subcommittee on Maternal and Child Health Funding and Financing
Jennifer M. Cernoch, Ph.D., Executive Director, Family Voices, Inc.

Dr. Cernoch reported that the funding subcommittee heard a presentation by Catherine Hess of the National Academy for State Health Policy, who gave an overview of Medicaid and Title V and family planning waivers. The opening statement of the funding subcommittee's paper will be as follows: "In order to preserve the safety net for women and children that has a positive impact on infant mortality rates and the integrity of the family, key elements of maternal and child health-related programs must be maintained and/or expanded with adequate public funding. The policies that promote family-centered care within community systems of care and the integration of essential health services through the use of contemporary information technology must be retained and implemented."

The subcommittee considered four priority areas:

1. *Maintain the core functions of the Medicaid program.* Medicaid is a $300 billion program, whereas the maternal and child health program totals about $5 billion. Therefore, a major discrepancy exists from a funding perspective. The core functions of the Medicaid program should be expanded because it is the main funding source for health care for pregnant women and infants and children. Some of the services that should be preserved and expanded include EPSDT, health education and prevention services, family planning services, and other features of primary health care. The subcommittee will conduct research on the services that States are mandated to provide under Medicaid as well as the optional services. Immunization services should be preserved and expanded along with evidence-based practices.

2. *Examine the development of strategies for preserving the Title V block grant.* The subcommittee will determine the scope of services currently provided under the block grant. Title V provides performance, health, enabling, and infrastructure services. Adequate funding must be preserved at the 2005 level of services ($724 million). The continuing resolution level is $700 million. The subcommittee recommends a return to the 2005 level of services and an expansion of the funds. If cuts are made to Medicaid, then the Title V block grant will be the safety net within the States.

3. *Promote the medical home concept for expectant families and infants.* The funding subcommittee will discuss this topic during a conference call.

4. *Examine improved health and information technology for maternal and child health services.* The funding subcommittee hopes to work in conjunction with another subcommittee on this topic.

Discussion

The report-outs from the subcommittees prompted the following comments and discussion:

- Dr. Collins referred to the need to develop a synergy between recommendations involving vital statistics and those involving electronic medical records. Dr. Cernoch suggested that once the disparities subcommittee and the clinical and public health practice subcommittee finalize their reports, it will be easier to determine the way in which the pieces fit together and support one another.

- In regard to Dr. Guyer's comments about the lack of timeliness of vital statistics, Dr. Frigoletto pointed out that complete data are available for 2003 and preliminary data are available for 2004. The perceived gap in data is real but not very important to SACIM's overall deliberations. Another year of data would not change SACIM's outlook at this point. Ms. Ryan stated that the clinical and public health practice subcommittee determined that if the Medicaid program or block grants are cut or changed, SACIM will not know the true impact of those cuts or changes in programs for more than 2 years. A top priority should be

to get the data as close to real time as possible to reveal the implications and impact of the cuts. Dr. Ryan added that final data for 1 year indicate that the infant mortality rate has increased, which might be construed as a blip. If data were in hand for 2 years, a stronger case could be made for saying that the infant mortality rate is on the rise. Therefore, more timely data offer some benefit. Dr. Frigoletto responded that the currency of the data is noteworthy given the rather dated methods used to arrive at them. More sophisticated data collection methods are needed for both vital statistics and electronic medical records.

- Dr. Ryan stated that the accuracy of vital statistics reporting also is important; many elements of birth certificates are very poorly reported. In response to a question from Dr. Frigoletto, Dr. van Dyck stated that the 2003 revision of the national birth certificate is slowly being implemented at the option of the States. In response to a comment by Dr. Miller, who reported that a Texas law only recently mandated birth certificates for stillborn children, Dr. van Dyck noted that the data will be affected if birth certificates for stillborn children are not uniformly issued across the States.

- Ms. Frazier noted the overlap in the three subcommittee reports, especially in addressing some of the lifestyle issues, such as obesity, related to birth outcome. Dr. Moore emphasized the importance of the prevention aspect of obesity in childhood. Ms. Frazier asserted that the intent of the disparities subcommittee is to address nutrition, not diet. Regarding the issue of obesity, Dr. Hayes pointed to the importance of measuring BMI on a continuum as a part of practice. Dr. Cernoch mentioned the importance of including prevention services and lifestyle change services in discussions of funding. Because Medicaid might perceive these services as ancillary and therefore insignificant, SACIM must inform Medicaid that these services should be expanded to provide an evidence base for healthy birth outcomes. Ms. Frazier agreed that Medicaid must be informed and educated about what works in practice.

- Dr. Frigoletto referred to a report of the Task Force on Community Preventive Services, which examined public health strategies for preventing and controlling overweight. Because of poor data, the systematic analysis was unable to discover evidence-based data to demonstrate the benefit of the intervention of weight control and physical activity. BMI should be used in a scientific way to examine that benefit and outcome. The importance of gathering significant pieces of information for retrospective reviews has been overlooked.

Discussion of Subcommittees' Direction

Dr. van Dyck asked the subcommittee chairs to report on their groups' progress in completing their reports.

- *Subcommittee on Eliminating Health Disparities.* Dr. Bronner reported that the disparities subcommittee has divided into three small groups based on the three priorities. By January 31, the first set of bullet points outlining the topic will be drafted and sent to the members by e-mail. Dr. Bronner will draft the front material, consisting of the vision statement, the background statement, and the problem statement. The leaders of each of the groups will interact to draft the other sections. The subcommittee members will review the content of the e-mails and participate in a conference call in mid-February to resolve any issues. The first

draft of the report is due at the end of February, followed by a conference call on March 15. Dr. Bronner requested an extension to the end of March to allow time for the subcommittee to review the draft before submission to MCHB.

- *Subcommittee on Improving Clinical and Public Health Practice.* Dr. Ryan reported that the clinical and public health practice subcommittee is in the process of scheduling two conference calls—one in early January and one in early February. Two reports are planned: a broad report on the subcommittee topic and a specific report on vital statistics. Dr. Ryan will e-mail revisions to the subcommittee members, and the members will engage in e-mail discussions about specific tasks for moving the rough draft to a more finished form. The subcommittee plans to offer a limited number of recommendations grouped according to headings. An outline of the report will be ready after the January conference call.

- *Subcommittee on Maternal and Child Health Funding and Financing.* Dr. Cernoch reported that, for various reasons, three members of the funding subcommittee have not been active. The active participants will hold a conference call on December 19 to discuss and outline the two priority areas that were not covered at this meeting. Dr. Cernoch will expand the information with the help of Dr. Collins, but other subcommittee members must be added by December 19 if the planning process is to go forward. A working outline will be produced by mid- to late-January. In response to a question about whether funding topics can be integrated into the other two reports, Dr. Cernoch agreed that many pieces of the other reports fit into funding, but some global funding recommendations should be made. The subcommittee must consider how to react given the "moving target" of funding and financing. For example, should specific recommendations be made on the basis of what is currently happening? Or should more general recommendations be made within the scope of funding and financing? It also will be important to use terminology carefully because the "current" level of funding is already reduced.

Dr. van Dyck suggested that the outlines of the reports be submitted to Dr. Koontz electronically by January 31. The outlines will be distributed to all of the SACIM members, who will review them and provide feedback to the subcommittee chairs. A conference call with the chairs can determine areas of overlap, and guidelines and deadlines for the draft reports can be reset at that time. The committee will approve the reports before the July meeting, at which time any changes can be considered. Dr. van Dyck stated that short paragraphs in the outlines might be useful for the problem statements and annotated outlines are acceptable.

Dr. van Dyck mentioned two issues involving timing: (1) the regular ongoing work of the committee and (2) urgent issues that can be dealt with by a letter from the chair to the Secretary. Dr. Hayes suggested writing a letter to the Secretary to highlight SACIM's observations about the budget cuts and the subsequent significant impediment to accomplishing its work. Dr. Roberts noted that many components of the legislation (e.g., prevention, education, integration of services) have not been adequately addressed because of funding. Furthermore, the current infant mortality rate indicates a loss of ground. These facts offer a good argument against the proposed reductions. Dr. Ryan stated his support of the committee expressing its concerns about cuts to the proposed block grant and Medicaid. Ms. Frazier suggested that Healthy Start be included in that statement.

A motion to send a letter to the Secretary regarding the committee's concerns about cuts to the block grant, Medicaid, and Healthy Start programs was made, seconded, and passed unanimously. Dr. Cernoch will send a draft of the letter to Dr. Collins, who will review it and forward it to the Secretary.

Dr. van Dyck emphasized that the committee must generate ideas about its actions regarding recommendations and concerns addressed to the Secretary or other entities or officials. After Dr. van Dyck explained the budget process, Dr. Miller moved that copies of the letter to the Secretary be sent to members of the conference committee, and Dr. Roberts moved that members of the Medicaid Commission also should receive copies of the letter. Both motions were accepted unanimously.

Ms. Barnes suggested that SACIM members send letters to their representatives in Congress. Dr. Cernoch urged that committee members do so and explained that individual representatives and Senators can have a direct influence on members of the conference committee. Dr. Cernoch raised a question about whether other programs (e.g., Title V, SCHIP, food stamps, Title X, lead poisoning prevention) should be added to the letter under discussion. Dr. Miller stated that the committee should concentrate its efforts on the programs that are most critical to SACIM's work. Dr. Hayes concurred, and Dr. Collins asserted that the letter to the Secretary would be limited to the three groups—Title V, Medicaid, and Healthy Start.

Dr. Bronner asked whether staff support is available for research tasks, including literature reviews. Dr. van Dyck responded that MCHB staff can do final-version editing, but drafting must come from the subcommittees. He added that the presentations contain research with references. The integration of the thoughts in the reports must be original with the committee to bring a unique perspective to the Secretary. Specific questions can be directed to Dr. Koontz.

Dr. van Dyck noted the progress that the committee members made at the meeting. Dr. Collins reminded the members about the next meeting on July 13–14, 2006. The meeting adjourned at 2:30 p.m.

PARTICIPANT LIST

Advisory Committee Members

James W. Collins, Jr., M.D., M.P.H., Chairperson
Robyn J. Arrington, Jr., M.D.
Renee T. Barnes, M.S., R.N.
Yvonne Bronner, Sc.D., R.D., L.D.
Jennifer M. Cernoch, Ph.D.
Deborah L. Frazier, B.A., R.N.
Fredric D. Frigoletto, Jr., M.D.
Bernard Guyer, M.D., M.P.H
Robert E. Hannemann, M.D.
Maxine Hayes, M.D., M.P.H., FAAP
C. Renee Elmen Hollan, R.N., B.A.N.
Ann Miller, Ph.D.
Yvonne Moore, M.D.
Joyce E. Roberts, C.N.M., Ph.D.
Christina M. Ryan, R.N., M.P.A., B.S.N.
Kevin J. Ryan, M.D., M.P.H.

Ex Officio Member

Patricia N. Daniels, M.S., R.D.
Director, Supplemental Food Programs Division
Food and Nutrition Service
United States Department of Agriculture

Advisory Committee Staff

Peter C. van Dyck, M.D., M.P.H.
Associate Administrator for Maternal and Child Health, HRSA
Executive Secretary, SACIM

Ann M. Koontz, Dr.P.H., C.N.M.
Associate Director for Perinatal Policy
Division of Healthy Start and Perinatal Services, MCHB, HRSA

Michelle Loh
Staff Assistant
Division of Healthy Start and Perinatal Services, MCHB, HRSA

Presenters

Hani Atrash, M.D.
Deputy Director
National Center on Birth Defects and Developmental Disabilities
Centers for Disease Control and Prevention

Holly Grason, M.A.
Associate Professor, Population and Family Health Sciences
Johns Hopkins Bloomberg School of Public Health

Jennifer Haas, M.D., M.S.P.H.
Department of Medicine
Harvard Medical School

Vijaya Hogan, M.D., M.P.H.
Clinical Associate Professor and Director of Curriculum on Health Disparities
School of Public Health
University of North Carolina

Merry-K. Moos, R.N., F.N.P., M.P.H., FAAN
Professor, Maternal-Fetal Medicine, School of Medicine
Adjunct Associate Professor, School of Public Health
University of North Carolina

Peter C. van Dyck, M.D., M.P.H.
Associate Administrator for Maternal and Child Health
Health Resources and Services Administration
Executive Secretary for SACIM

Howard A. Zucker, M.D., J.D.
Deputy Assistant Secretary for Health
Department of Health and Human Services

Other Attendees

Maribeth Badura
MCHB, HRSA

Lori Cooper
SIDS Project IMPACT

Juliann DeStefano
MCHB, HRSA

Johannie Escarne
MCHB, HRSA

Lacy Fehrenbach
ASTHO

Rita Goodman
OMHHD, HRSA

Isadora Hare
MCHB, HRSA

Angela Hayes-Toliver
MCHB, HRSA

Lisa King
MCHB, HRSA

Audrey Koertvelyessy
MCHB, HRSA

Michael Kogan
MCHB, HRSA

Eve Lackritz
CDC

Mei Li
HRSA

Jeanne Mahoney
ACOG

Henry Maingi
AMCHP

Susan Meikle
AHRQ

Jo Merrill
March of Dimes

Patti Milcher
FNS, USDA

Madelyn Renteria
MCHB, HRSA

James A. Resnick
MCHB, HRSA

Irene Sandvold
BHPr, HRSA

Phillip Smith
IHS

Danielle Sollers
AMCHP

Wilma Tilson
ASPE

Stella Yu
MCHB, HRSA

Suganthi Walter
HRSA