

**National Institute of Diabetes and Digestive and Kidney Diseases
2008 Diabetes & Obesity Disparities in Health Care Systems Conference**

**June 30–July 1, 2008
Natcher Auditorium, NIH Campus
Bethesda, MD**

Summary Report

DAY 1—JUNE 30, 2008

WELCOME

Christine Hunter, Ph.D., ABPP, Director of Behavioral Research, Division of Diabetes, Endocrinology, and Metabolic Diseases, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH)

Dr. Hunter welcomed participants and thanked the Planning Committee for developing an agenda that includes topics and speakers who can provide important information on health disparities research. She expressed her gratitude to the Co-Chairs of the conference for providing leadership in making the conference a reality from the earliest planning stages. The Co-Chairs are Giselle Corbie-Smith, M.D., M.Sc., Associate Professor, Department of Social Medicine, University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC; and Glenn Flores, M.D., F.A.A.P., Professor and Director, Division of General Pediatrics, University of Texas Southwestern and Children's Medical Center of Dallas, TX,

In addition, Dr. Hunter thanked the Agency for Healthcare Research and Quality (AHRQ) and the National Center on Minority Health and Health Disparities (NCMHD) as co-sponsors with NIDDK and acknowledged the support they gave in planning decisions.

INTRODUCTORY REMARKS

Griffin Rodgers, M.D., M.A.C.P. Director, NIDDK, NIH

Dr. Corbie-Smith introduced Dr. Griffin Rodgers, Director of NIDDK, to make introductory remarks. She provided a short bibliography, including highlights of his investigational research in hematology at NIDDK.

Dr. Rodgers welcomed participants and thanked the co-sponsors. He said that health disparities research is a high priority for NIDDK, especially disparities related to diabetes and obesity. Both conditions affect almost every human organ system and are associated with increased morbidity and mortality. Because of the morbidity and mortality associated with diabetes and obesity, many other NIH Institutes and Centers are interested in disparities research on these conditions.

Health complications from obesity have doubled since 1980, especially among minority populations. Troubling to most researchers and health professionals is that the most recent data on diabetes and obesity indicates dramatic increases in racial disparities for obesity and type 2 diabetes (T2D) in minority youth.

Societal factors have increased health disparities in diabetes and obesity. For example, minorities tend to have worse outcomes across many diseases and conditions. This failure of the health care system to address racial and ethnic disparities in outcomes is an area that needs to be addressed.

NIH has established a trans-NIH Obesity Task Force to develop a research agenda across NIH Institutes and Centers. They have produced a research strategic plan that includes funding opportunity announcements, research goals, and initiatives to address the obesity epidemic. The full report may be found at <http://www.obesityresearch.nih.gov/about/strategic-plan.htm>. The strategic plan included 8 Program Announcements (PA), of which this conference is the response to one of them. The PA, issued in June of 2007 was to support a R01 grant on “Identifying and Reducing Diabetes and Obesity Related Health Disparities within Healthcare Systems.” (See the PA on the NIDDK website at <http://grants.nih.gov/grants/guide/pa-files/PA-07-388.html>) The intention of the PA was to bring together multi-disciplinary researchers from across NIH and from outside NIH to learn of the state-of-the-science in diabetes and obesity disparities research and to develop recommendations for future research.

John Ruffin, Ph.D., Director, National Center on Minority Health and Health Disparities (NCMHD), NIH

Dr. Flores introduced Dr. John Ruffin, Director of NCMHD, to make introductory remarks. He provided a short bibliography.

Dr. Ruffin commented that this conference is timely because of the dramatic rise in diabetes (15 percent) in the past two years, which pushes the number of Americans with T2D to approximately 24 million. The new data on diabetes clarify health disparities in occurrence and outcomes.

Dr. Ruffin thanked the conference organizers for assembling an excellent agenda that covers many aspects of health disparities, including age, ethnicity, and race. He said it was imperative that NIH continue to expand its focus on health disparities and make every effort to involve minority researchers. To address the economic issues that discourage minority physicians and scientists from pursuing research careers rather than entering private practice, NCMHD and NIH have a loan repayment program that eliminates much of the accrued debt from medical school if applicants commit to a research career. More than 1,400 researchers have availed themselves of this program.

Dr. Ruffin announced that a national conference on health disparities will be held December 16-18, 2008, at the new Gaylord National Resort and Convention Center, National Harbor, MD. The conference will showcase efforts at NIH to address health disparities. NCMHD is a co-sponsor of the conference, and the planned attendance is for 3,000. Everyone at this conference

will receive information on the national conference when it becomes available. Information also will be posted on the NCMHD website at <http://ncmhd.nih.gov/>.

OVERVIEW OF THE CONFERENCE

Dr. Corbie-Smith reminded participants that this conference is being held as an outcome of a NIDDK PA 07-388: *Identifying and Reducing Diabetes and Obesity Related Health Disparities within Healthcare Systems (R01s)*, which was issued in June, 2007. The focus of the PA was to receive proposals that targeted the promotion of healthcare-based research aimed at reducing or eliminating disparities in diabetes- and obesity-related outcomes. The agenda was developed based on the PA so that each area of interest could be covered by presentations and discussions.

At the end of the regular conference agenda, NIDDK is offering a training session on grant writing that should assist those interested in responding to the PA.

SESSION I: HEALTHCARE RESEARCH: SETTING THE STAGE

Context: The Importance of a Healthcare Systems Approach

Dr. Corbie-Smith

Dr. Corbie-Smith provided an overview of Session I, which focuses on the epidemiology of health disparities and provides the framework for a systems approach to developing strategies for addressing health disparities.

Epidemiology of Health Disparities in Adults

Edward Gregg, Ph.D., Acting Chief, Epidemiology and Statistics Branch, Division of Diabetes Translation, Centers for Disease Control and Prevention (CDC), Atlanta, GA

Dr. Gregg summarized and highlighted major disparities in the prevalence of diabetes and obesity and disparity relevant to developing a public health response to these conditions, including delivery and quality of diabetes care, complications and outcomes of diabetes, and implications for prevention. Detection is the area that was the focus of the presentation.

Potentially distinct vulnerable populations at risk for suffering health disparities may be distinguished by factors such as race and ethnicity, socioeconomic status (SES), age, sex, geography, and insurance status. Data from the National Health and Nutrition Examination Surveys (NHANESs) indicate that one in ten U.S. adults have T2D (diagnosed or undiagnosed), but the number is one in six in African American adults and almost the same in Mexican American adults. Trends indicate that diabetes prevalence has increased in the past 25 years in those with lower SES and less educational attainment. Geography also may be important, with those from the Indian subcontinent, Africa, Mexico, and Central America having the highest prevalence. In regions of the United States, Southern states have the highest prevalence. Obesity prevalence has a lesser association with factors such as income, education level, age, and other identified societal factors, but occurs more evenly across groups than diabetes.

For diabetes care disparities, glycemic control in the United States is improving in most sub-groups except among those without insurance. In people with diabetes, the incidence of high blood pressure, high cholesterol levels, and smoking are decreasing, but, there is a disparity in this trend in lower income populations.

Data from the Translating Research into Action for Diabetes (TRIAD) study indicates that there may not be as much of a health disparity in a managed care setting as among individuals in other health delivery systems. Results from TRIAD reported in the past few years indicate that:

- Race, income, and education is only modestly associated with processes of care.
- Race differences in glycemic and blood pressure control persist despite similar processes of care.
- Diabetic women are less likely in processes of care to manage and control cardiovascular disease (CVD) risk factors.
- Young adults with diabetes are particularly likely to have persistent lapses in care and have worse risk factor care.

Analyses of data from managed care organizations show that there are few health disparities in morbidity outcomes and diabetes complications such as foot amputations; one exception may be the higher levels of hospitalization due to diabetic ketoacidosis in African American males.

Data from various national data sets do indicate that many diabetes complications are improving; the lack of progress among African Americans in the incidence of end-stage renal disease (ESRD) and congestive heart failure, and CVD in women with diabetes being the exceptions. If the same data is assessed using a denominator for the entire U.S. population, the decreases seen in diabetic complications no longer exists. That ESRD rates are increasing in prevalence in vulnerable groups, this may portend worsening disparities in the future.

Dr. Gregg summarized his presentation by identifying key areas of disparities in diabetes-related morbidity. These include the following:

- Diabetes processes of care have improved nationally, and these improvements are seen across diverse racial/ethnic groups.
- Risk factors for diabetes complications (i.e., “intermediate outcomes”) have improved substantially in diverse groups, but, disparities by income, education, and race/ethnicity persist; disparities appear to persist more in income and education; and persons without insurance have increased risk.
- Improvements in smoking and blood pressure may have slowed, particularly among vulnerable populations.
- The extent of small area and regional variation in these trends is unknown.

Key areas of persistent disparities in diabetes-related intermediate outcomes and morbidity are renal disease in African Americans, Native Americans, and Latinos, and hyperglycemic crisis and overall hospitalization rates among the same groups. A general disparity in diabetes

incidence and prevalence exists among non-whites. A key area where disparities appear to be improving is diabetes-related amputations among African Americans.

New areas of concern regarding disparities include smoking among young people and CVD mortality among women. Are women with diabetes getting the same care as men? Areas that still are unknown from existing data include the disparity-related incidence of CVD as a complication of diabetes, and the disparity related to regional and local variation.

Dr. Gregg completed his presentation by providing an overview of the role of health care systems in alleviating disparities. A lot is positive in improving diabetes-related complications, and the impact of health services and health promotion programs should not be discounted, although this may have been initiated more from Federal and State programs than from health care systems.

Health systems should be thought of differently than health services. Some challenges for improving health disparities through health systems include the following.

- Efficient identification of high risk persons.
- Diffusion of new science related to prevention.
- Development of effective lifestyle programs in health systems.
- New benefit designs.
- New indices and measurements of quality of care.
- Effective partnerships with community programs.
- Effective counseling to influence physical activity, diet, and weight maintenance.
- Outreach to neighborhood-related barriers.
- Tailoring to cultural, language, and education variation.
- Mass media and social marketing.
- Outreach to schools and youth.

Epidemiology of Health Disparities in Children and Adolescents

William Dietz, M.D., Ph.D., Director of the Division of Nutrition and Physical Activity, National Center for Chronic Disease Prevention and Health Promotion, CDC, Atlanta, GA

Dr. Dietz began his presentation by noting that the successive NHANES show that the prevalence of obesity in both boys and girls increased to comparable extents in all ethnic groups between 1988-94 and 2003-4. In boys, obesity is most prevalent among Mexican Americans, whereas the highest prevalence in girls is among non-Hispanic blacks. African American girls have higher body mass indexes (BMIs) than Caucasian girls do, with the disparity increasing with age. Recent studies suggest that the prevalence of obesity is beginning to flatten in children and adolescents. The relationship between BMI and socioeconomic status (SES) in children varies with ethnicity; the prevalence of obesity diminishes with increasing SES in white children, but African American children show a different, flatter pattern. Children with developmental disorders, especially those with limitations in physical activity, have an increased prevalence of obesity. Research has shown that obesity is the most stigmatizing condition that a child or adolescent can suffer; thus, obesity itself creates disparities in such factors as income, education, and likelihood of marriage.

There are major differences in the frequencies of Type 1 and Type 2 diabetes in children from different ethnic groups. Non-Hispanic whites have the highest prevalence of Type 1, while American Indians have the highest prevalence of Type 2. Further research is needed to determine the contributions of genetics and obesity to these differences.

The problem of obesity in children must be addressed on multiple levels, ranging from societal forces; to individual knowledge, attitudes, and behaviors; to physiologic states. Factors associated with excess risk of obesity in minority children include food insecurity, cultural differences in body image, attitudes toward leisure time, limitation of physical activity due to safety concerns in urban neighborhoods; and the availability of supermarkets and fitness and recreational facilities.

Many adult attitudes about feeding young children are consistent across ethnic groups. Parents in all groups want to provide the best foods for their children, are concerned about sweets, prepare foods that the child likes, use bribes and rewards, believe that children cannot determine satiety, and want guidance about portion size. African American mothers do not believe that children are sufficiently mature to know when and how much to eat, and Mexican American mothers do not believe that food should be withheld or refused when requested; both attitudes may promote overfeeding. Use of television and other screen media is highest among African Americans, intermediate in Hispanics, and lowest in Caucasians; this difference may relate to ethnic disparities in the prevalence of obesity, especially among girls. Food advertising differs on television channels aimed at different ethnic groups, with higher frequencies of commercials for soda, candy, chocolate, and desserts on channels aimed primarily at African American audiences. Concern about hairstyles may limit physical activity in African American girls.

Health care providers need to be aware of cultural factors when working with obese children and their families. In addition, addressing obesity in the health care system should go beyond the clinical encounter. Community factors and the environment overlie healthcare providers' and families' ability to implement changes related to obesity, so obesity needs to be addressed at these levels as well.

Questions & Answers on Epidemiology

Moderator: *Dr. Flores*

Dr. Flores asked Dr. Gregg to explain the alarming data on disparities among African American males. Dr. Gregg responded that it is difficult to determine what is modifiable and what is not. Among African American males obesity does not appear to contribute as much to health risks as that seen in African American women. Differences in CVD, smoking, and kidney disease may account for some of the disparity. Researchers can determine what influences a disparity by taking a multi-faceted approach that allows separating out risk groups and analyzing the intersection of economic and racial factors.

Dr. Flores asked Dr. Dietz about his graph showing dramatic increases (0.5 body mass index [BMI] increase per year) among African American girls compared to white girls, and if he could explain factors that may be responsible and where we can intervene. Dr. Dietz clarified that

there are not great differences in food intake among these groups so we need to look at other factors, such as soft drink intake.

Dr. Carol Mangione asked whether the BMI percentiles for children are adjusted by ethnicity due to differences in muscle mass, and whether the same BMI in both white and African American children confers the same risk. Dr. Dietz explained that BMI percentiles are not adjusted, but this is something that should be investigated for future studies. It was noted that differences disappear at the 95th percentile regardless of ethnicity.

Dr. Patrick O’Conner, HealthPartners Research Foundation, Minneapolis, MN, asked for an opinion on whether data should be adjusted for insurance status. Dr. Gregg answered that he likes to see the data as collected and unadjusted. Dr. O’Conner clarified that if a health care system looks at the quality of a medical group they will find some that are working with more economically-disadvantaged patients and have more challenges and possibly worse outcomes than physicians working in high income areas. If an incentive bonus is made based on outcomes, would most doctors avoid practicing in lower income areas? Dr. Gregg said it would be unfortunate if this is the way the data is used, but that some way to take these factors into account would seem reasonable.

Dr. Helen Looker, Mount Sinai School of Medicine, New York, NY, asked if the difficulty in measuring societal differences may be influencing the impact of race in the data, and whether it may be something other than race that has the most influence. Dr. Gregg responded that this is one of the points he made during his talk.

Research Framework—Conference Model

Amy Kilbourne, Ph.D., M.P.H., Associate Professor, Department of Psychiatry, Ann Arbor VA Medical Center, University of Michigan, Ann Arbor, MI

Dr. Kilbourne’s presentation focused on a definition of health disparities developed by the Center for Health Equity Research and Promotion (CHERP) of the Pittsburgh Veterans Affairs (VA) Medical Center, which specifies that health disparities are “observed, clinically and statistically significant differences in *health* or *health care* between *vulnerable populations* that are not explained by selection effects.”

This definition emphasizes the importance of vulnerable populations, i.e., those populations that are disadvantaged based on inequalities in income, education, or access. Vulnerable populations include racial/ethnic minorities, rural populations, women and children, individuals with permanent disabilities, cohorts with similar military experience, and those in challenging living conditions (e.g., the homeless). Dr. Kilbourne presented examples of situations in which African Americans and people with disabilities (mental illness) experienced significant differences in the quality of health care that they received, as compared with other segments of the population.

Three levels or generations in health disparities research have been identified: the first generation, which involves *detection* of disparities in health or health care; the second, which involves *understanding* the reasons for disparities; and the third, which involves developing interventions to *reduce* or eliminate disparities.

Some of the factors to be considered in health disparities research relate to the individual patient, including fixed factors such as race/ethnicity, age, and prenatal environment; difficult-to-modify factors such as education, income, and culture; and more modifiable factors such as self-advocacy, beliefs and preferences, psychosocial functioning, and competing needs. Focusing on this last group of factors is most useful to the development of effective interventions, Dr. Kilbourne stated.

Other factors related to health disparities involve the healthcare system (e.g., the accessibility and availability of care), healthcare providers (e.g., their communication skills and cultural competence), and community factors, both those outside of healthcare (e.g., food availability, transportation, and public safety) and those related to healthcare (e.g., the availability of lay health workers and health educators).

To reduce disparities, efforts must be made to close the gap between research and practice. Effective, evidence-based behavioral interventions exist for diabetes and other chronic illnesses, but they are not reaching patients. Often, programs are not disseminated in the community because toolkits are not sufficiently specific, because training is expensive, or because there is no effective business model for sustaining interventions once they are proven effective. To close the research-community gap, it is important to develop and implement interventions with the community in mind. Key factors to consider include the relevance of an intervention, its accessibility to the target population, its acceptability in the community, its duration (brief interventions are easier to implement than lengthy ones), and whether it can be sustained as an ongoing program in the community.

Questions & Answers on the Research Framework

Moderator: *Dr. Corbie-Smith*

Dr. Corbie-Smith asked if Dr. Kilbourne had considered using an asset-based approach to address some of the disparities. Dr. Kilbourne noted that there are many ideas from other cultures that we could use to apply to the Western view of weight. Working with communities first is important to have them identify problems—this is a proactive approach in disparities research that ties in to assets. Dr. Corbie-Smith followed up by asking Dr. Kilbourne if patients in a community can change. Dr. Kilbourne said that this is an area that is not well defined, but there is some literature in the mental health field that applies to implementing the community model.

Dr. Jarol Boan, Pennsylvania State University, Milton S. Hershey Medical Center, Hershey, PA, asked how many of the modifiable risk factors are based on income, race, or other factors. Dr. Kilbourne said that this information is important to better understand the factors confounding disparities. Interventions should be tailored to the group that is the target of the intervention.

Dr. David Lanier, Agency for Healthcare Research and Quality (AHRQ), Rockville, MD, had a question about sustainability of interventions, especially looking at interventions in terms of a business model. Dr. Kilbourne replied that there are two stages in designing interventions. The first is to ascertain that the interventions will be implemented as designed, and that they are

appropriate to the community that is targeted for the intervention. The second stage is to think about ways to measure the return on investment if the intervention is implemented, giving the community and health systems motivation to sustain it in the long term.

SESSION II: STATE-OF-THE-SCIENCE IN HEALTHCARE DISPARITIES RESEARCH

Overview of Session II

Dr. Hunter

Dr. Hunter introduced speakers for Session II and provided an overview of topics to be covered.

Healthcare System Factors/Health Services Research

Marshall Chin, M.D., M.P.H., Associate Professor of Medicine, Department of Medicine, University of Chicago, IL

Dr. Chin reviewed health system interventions that have reduced disparities in diabetes care. A recent systematic review supported by the Robert Wood Johnson Foundation indicates that the most promising strategies are:

- Multifactorial interventions that target multiple levers of change
- Culturally tailored, rather than generic, quality improvement (QI) programs
- Nurse-led interventions within the context of wider systems change, including the use of teams, tracking and monitoring of patients, and the use of patient registries.

Dr. Chin presented an example of health systems research involving a 10-year collaboration on diabetes QI research between a network of 55 community health centers and University of Chicago researchers. A baseline quality of care study in these centers found that quality was suboptimal in comparison with standards established by the American Diabetes Association but similar to the quality of care provided in other settings during the same time period; it also showed substantial variations in care among the participating centers. The reaction to this study was not entirely favorable because of the implication that community health centers were providing inferior care. A needs assessment study identified barriers to better care, including:

- Providers perceive that patients do not value key processes of diabetes care highly.
- Providers lack confidence in behavior change.
- Cost barriers.
- Health center system barriers.

Subsequent intervention studies demonstrated that diabetes processes of care could be improved in the short term, with longer-term (4-year) follow-up showing improvement in outcomes as well. Simulations indicate that QI programs in diabetes care can lead to significant outcome improvements, with an Incremental Cost Effectiveness Ratio (ICER) of \$33,386 per Quality Adjusted Life Year (QALY), which is cost effective in comparison with other programs.

However, QI programs represent a new cost with no regular source of revenue, which raises concerns about their sustainability.

Key research questions for reducing disparities include:

- How can interventions developed in the research setting be successfully implemented in other organizations and patient populations?
- How can the strengths of the community be integrated with the strengths of the health care system?
- Can performance incentives have an effect on disparities?

Dr. Chin concluded by stating that to reduce disparities now, health care providers and organizations need to examine their own stratified performance data to determine whether disparities exist; train staff to work with diverse populations; make disparities integral to QI programs and provide support for disparity-related QI; align incentives; and allocate more resources to care for the underserved.

Questions & Answers

Moderator: *Dr. Flores*

Dr. Len Pogach, Veterans Administration New Jersey Healthcare System, East Orange, NJ, asked about rewarding relative improvement, and how are these minimal changes measured. He asked if health services researchers are reporting clinically meaningless information. Dr. Chin responded that the challenge in determining relevant clinical performance is what to measure and how one can meet the goal by setting realistic implementation measures. There are two tenets in performance measure: the rich get richer and have doctors dump bad patients. These performance measure tenets cannot improve the system.

Dr. Judith Fradkin, Division Director, NIDDK, commented that she was struck by the concordance between Dr. Chin's data and previous data presented by Dr. Gregg showing improvement in glycemic control but not in blood pressure control, and whether this is a factor in the increase in prevalence of kidney diseases among minority populations. Dr. Chin suggested that many patient in his clinic started off with controlled blood pressure and there may not be a way to compare this data to Dr. Gregg's national data. It also may mean that the system chose to concentrate on glycemic control rather than blood pressure as part of their internal measures.

Healthcare Team Factors

Lisa Cooper, M.D., M.P.H., Professor, Division of General Internal Medicine, Department of Medicine, Johns Hopkins School of Medicine, Baltimore, MD

Dr. Cooper provided a review of factors affecting healthcare teams and quality of care. Although many studies have documented differences in the technical quality of health care received by people of different races and ethnic groups, fewer have focused on the interpersonal quality of care, even though interpersonal quality is related to important outcomes, including patient adherence, patient satisfaction, and clinical outcomes (e.g., glycemic control in diabetes).

Dr. Cooper's presentation focused on the role of interpersonal quality of care in understanding and eliminating health care disparities.

Except in instances where patients and physicians share the same ethnic background (race concordance), members of minority groups experience poorer interpersonal quality in health care. Studies in primary care settings have shown that physicians communicate differently with black and white patients and that the emotional tone of race-discordant clinical encounters is less positive than that of race-concordant encounters. Observed communication differences, however, only partially explain racial differences in patient ratings of interpersonal quality. Explicit and implicit bias on the part of physicians also plays a role and has been shown to influence both physicians' perceptions of patients' compliance and their referral of patients for appropriate tests and procedures.

Efforts to decrease bias have focused on 1) cultural competency training programs and 2) training in patient-centered communication. Studies of cultural competency training have provided excellent evidence that such training influences provider knowledge and attitudes/beliefs; good evidence that it influences provider skills and patient satisfaction; and only limited evidence (one study) that it influences patient adherence. Effects of cultural competency training on health outcomes have not been studied.

Preliminary results from a controlled trial of patient-centered communication training show that physicians who had such training improved their patient-centered interviewing ratios and their patients showed greater improvement in satisfaction after 3 months. Coaching of patients in communication skills led to greater improvement in participatory decision-making and an improved health outcome (better blood pressure control) at 3 months.

These research findings imply that the following approaches to reducing disparities in the interpersonal quality of health care would be helpful:

- Training health professionals using patient-centered communication skills programs that emphasize rapport building and affective dimensions and enhance awareness of bias and intercultural skills.
- In clinical practice, implementing programs that enhance patients' communications skills, and improving scheduling in order to increase the time to build rapport and develop continuity of care.
- Increasing the numbers of underrepresented ethnic minorities among health professionals (because research supports the concept that race concordance is associated with better interpersonal quality of care).

Questions & Answers

Moderator: *Dr. Corbie-Smith*

Dr. Mangione commented that it is time to address very difficult questions about the model for health disparities. She said it is time to require mandatory curriculum in medical schools on racial bias, and asked if it was possible to know the role of continuity in actual practice and the impact on healthy delivery. Dr. Cooper responded that most certification organizations require

some training on cultural competency but there is no way to know to what extent this is being done. In the studies described in the presentation, most of the patients and physicians had a continuous long-term relationship so continuity should not have been a problem in the study. On a broader scale, there are published reports that show communication problems are reduced when there is continuity.

Patient-Level Factors: Children

Elsie M. Taveras, M.D., M.P.H., Assistant Professor of Ambulatory Care and Prevention and Pediatrics, Department of Ambulatory Care and Prevention, Harvard Medical School and Harvard Pilgrim Health Care, Boston, MA

Dr. Taveras began her presentation— “Family- and Individual-Level Risk Factors Associated with Childhood Obesity”—by noting that although the overall prevalence of childhood obesity may be stabilizing, as Dr. Dietz reported earlier in the meeting, racial and ethnic differences in the prevalence of obesity in children are marked and significant and may be increasing. Childhood obesity is important because of its many medical complications during childhood itself, not just because it predisposes to adult obesity. Racial/ethnic minority children and those living in low-income households bear a disproportionate share of the burden of obesity and its co-morbidities, making development of intervention strategies for these groups particularly urgent.

In the most general terms, obesity is caused by long-term positive energy balance, with energy intake exceeding energy expenditure. Specific family- and individual-level risk factors for childhood obesity include:

- Parental obesity
- Shorter duration of breastfeeding
- Greater consumption of sugar-sweetened beverages
- Greater television viewing
- The presence of a television in the child’s bedroom
- Greater intake of fast food
- Lower participation in physical activity
- Shorter duration and poorer quality of sleep in infancy and childhood

Several of these factors have been shown to be more prevalent in children from minority groups than in others. African American mothers are less likely than white mothers to initiate and continue breastfeeding. Black and Hispanic adolescents are more likely than white adolescents to have televisions in their bedrooms, with the frequency of televisions in bedrooms being particularly high in low- to middle-income minority families. Members of racial and ethnic minorities are much more exposed to fast-food outlets and therefore are likely to have higher intakes of fast food. African American infants and children sleep less than white children do. Among girls, the decrease in physical activity with age is greater among African Americans than whites, to the point where black girls age 16 and older participate in essentially no physical activity.

To successfully address the problem of higher rates of obesity among minority-group children, research priorities need to go beyond the generic and identify specific family/patient characteristics or behaviors in minority populations that contribute to increases in risk. Efforts to combat childhood obesity need to be family focused because the majority of adult caregivers of obese children are themselves overweight or obese, and treatment of the adults' problem often leads to improvement in the child's weight status as well. Finally, in Dr. Taveras's view, determining which interventions have the highest feasibility and greatest potential impact is the most important research priority. Such interventions may involve community settings, school and child care settings, and family and home interventions as well as interventions in health care settings. Efforts to prevent or treat obesity in the health care setting are not likely to be successful without partnerships with these other areas.

Patient-Level Factors: Adults

Frederick Brancati, M.D., M.H.S., Professor of Medicine, Department of Medicine, Division of General Internal Medicine, Johns Hopkins School of Medicine, Baltimore, MD

Dr. Brancati began his presentation by noting that many commonalities exist between children, as discussed by Dr. Taveras, and adults.

Diabetes has increased dramatically in African Americans in the past century, an effect that cannot be attributed primarily to genetics, even though there is increasing evidence that genetic risk markers may play a role in racial disparities in diabetes risk. Other factors must be involved in the progression that people undergo from being lean and insulin sensitive, to being obese and insulin resistant, to developing impaired glucose tolerance and elevated fasting glucose, to developing Type 2 diabetes, and then to developing compromised health status and increased mortality. Intervention may be possible at various points in this progression. Dr. Brancati discussed possible targets for intervention, focusing primarily on research performed at Johns Hopkins University.

The fetal environment may be an important determinant of diabetes risk, just as it is for cardiovascular disease. People who were smaller at birth are at higher risk of developing diabetes in middle age. This is a potential contributor to racial disparity because African American mothers tend to give birth to smaller babies, and it is a potential target for intervention because the fetal environment can be modified.

Lung function may also play a role. People with smaller lungs, as indicated by lower forced vital capacity, have a higher risk of diabetes. African Americans have about 20 percent lower forced vital capacity than whites do, perhaps reflecting abnormal early development.

Healthy food intake is important in preventing obesity and therefore Type 2 diabetes, but surveys show that African Americans are less likely than whites to meet guidelines for fruit and vegetable intake. Studies in Baltimore show that census tracts that are primarily African American have few supermarkets and that the stores present in such neighborhoods have fewer healthy foods available than those in white neighborhoods. Beverage intake may also play a role in racial disparities. African Americans are more likely to consume fruit drinks and less likely to

drink diet sodas. They are also less likely to drink coffee; substantial evidence indicates that coffee intake may protect against diabetes.

Differences in clinical practice may also be involved in racial disparities. “Sloppy,” potentially inaccurate blood pressure readings are more common for black patients than white patients, and black patients with existing diabetes have been shown to require more clinic visits than white patients before having their antidiabetic medications advanced.

Dr. Brancati concluded by drawing attention to two upbeat notes in the prevention and control of diabetes in African Americans. First, benefits have been demonstrated in a program in which nurse case managers and community health workers worked with African American patients with diabetes. Second, in a prevention program in which individuals at high risk of diabetes were treated with metformin or lifestyle changes, the results in African Americans were even better than those in white patients. Thus, if patients are willing to participate and if committed health professionals become involved, interventions can be successful.

Questions & Answers: Patient-Level Factors

Moderator: *Dr. Flores*

Dr. Looker asked about advertising and whether it is possible to assess exposure of children to advertising on computers as opposed to TV and radio. Dr. Taveras reported on a study by the Kaiser Foundation on the time spent in front of computers and TVs, but the study was not able to tell if the inactivity of sitting in front of either medium was responsible for increased obesity rather than the effect of advertising. The Institute of Medicine also looked at the issue of food advertising in a report a few years ago. It is difficult to tease apart which factor is responsible for weight gain, but it is likely the advertising and not the lack of physical activity.

Dr. Flores asked Dr. Brancati to expand on his slide on disparities and the likelihood of intensifying the diabetes regimen. Are there questions of etiology that might be of interest to young investigators? Dr. Brancati said that he did not show data on intensification of blood pressure control, but there was no disparity between black and white populations as there was between these populations regarding diabetes control intensification. Rather, they found that when there was co-management (i.e., cardiologist and primary care physician), blood pressure care was less aggressive for blacks and whites, perhaps because each physician was waiting for the other to advance the antihypertensive regimen. Dr. Taveras added that it is a constant challenge to give consistent family care because adults are seen by one group of physicians and the child is seen by pediatricians. It seems logical to be able to see the family together, although insurance will not cover this type of program.

Dr. Pogach asked if there is data on the impact of having high glucose levels on A1C levels. Dr. Brancati responded that questions remain about the relationship between circulating glucose and A1C levels. They are beginning to see data on this issue.

Dr. Steven Gortmaker, Harvard School of Public Health, Boston, MA, asked about A1C levels as a risk factor in children and adults, and if there are interventions for adults. Dr. Brancati responded that it is a risk factor in adults but that programs to reduce A1C in adults need to be

creatively implemented. Dr. Flores added that parents of Hispanic children want family exercise opportunities to improve health.

A participant asked about the family interventions and whether there was a consideration measuring the impact of an intervention in the child and what effect that had on the parents, as seen in smoking intervention programs. Dr. Taveras said that there is an impact the other way; when parents undergo weight management programs, the effects are seen in the children. Dr. Boan commented that a program in Pennsylvania that addresses this issue. A state agency has implemented a program to reimburse pediatricians for treating obesity in children, and includes payment to primary care physicians who counsel the family of the child. Reimbursement includes family counseling sessions that could include activities like taking the family to a supermarket to teach them how to make healthier food choices. Currently, the program is only available to families participating in Medicare or Medicaid.

Dr. Sharon Utz, University of Virginia, Charlottesville, VA, informed participants about an ongoing program at the university regarding obese children and parents. A multidisciplinary team spends time with the family for educational purposes on a weekend. After the intervention, the family is followed to see the impact of the intervention. Dr. Taveras commented that this program and the one in Pennsylvania sound like programs that need to have some distribution to other states and programs so they can be considered for wider distribution.

A participant asked a question about innumeracy (the lack of understanding of numbers) and control of A1C and lipid levels. He described a program to inform patients about the numbers involved in their condition, which were taken from patient records; oddly, the patients who received the intervention did worse than those who did not. He asked if innumeracy may be a barrier for some patients that could be related to disparities. Dr. Taveras said that understanding the numbers associated with a diagnosis is often confusing to patients. She often has parents think that being in the 95th percentile in weight is good because it is near 100 percent. BMI is another good example of numbers that confuse patients. Dr. Brancati added that literacy and numeracy are big issues. His research group has looked at the literacy but did not find much connection between it and adherence or outcomes. The participant said that the possibility that innumeracy or health literacy affects outcomes may not be relevant. It would be better to use words in these situations. Stories pack more of a punch than numbers for most people.

Community Factors: Community-Based Participatory Research (CBPR): Linking to the Community

Alice Ammerman, Dr.P.H., R.D., Director , Center for Health Promotion and Disease Prevention, Professor, Department of Nutrition, Schools of Public Health and Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC

Dr. Ammerman discussed community-based participatory research (CBPR), an approach to research that is well suited for addressing health care disparities but that presents unique challenges because of the need to balance research rigor with the preferences and priorities of the community. Often, communities think that researchers are imposing on them, while academics think that community participation is incompatible with rigorous research. Both of these views need to be addressed and overcome for CBPR to be successful.

Community motivation and buy-in are most likely to be achieved if the community is involved in multiple stages of the research process. A systematic evidence-based review of CBPR studies funded by the Agency for Healthcare Research and Quality (AHRQ) found that the stages in which community participation was most frequent were recruitment and retention of participants and measurement instruments/data collection. Intermediate frequencies of community participation were observed for selection of the research question, study design, intervention development and implementation, interpretation of findings, dissemination of findings, and application of findings to the identified health concern. Community participation was lowest for proposal development and financial responsibility for grant funds. In the same review, analysis of research quality and degree of community involvement across various study designs showed that high-quality research and intense community involvement were not incompatible. The review identified several examples of outstanding research combined with collaborative community participation throughout the research process.

Obtaining funding for CBPR projects can be challenging. The fundamental concept of CBPR is that the researchers build their project with the community, but funders expect grant proposals to describe everything that the researchers plan to do. A workable approach to grant applications for CBPR projects involves describing a planned study design but explaining that it may be modified by community input.

Dr. Ammerman offered the following tips for writers of proposals for CBPR:

- Good community-based participation does not substitute for or preclude good research.
- Community partners should be involved in the project as early as possible.
- Researchers should trust community partners to understand research basics and to have good ideas about intervention and measurement. Potentially troubling aspects of study design such as randomization should be explained thoroughly so that community partners can understand the need for them.
- Researchers should describe the potential research benefits of CBPR to their community partners, plan for sustainability, and think creatively about the optimal balance between scientific rigor, implementation constraints, and ethical treatment of community partners. Being responsive to the community's resource burden and needs is important. One of the benefits of CBPR collaborations is that community partners can see the long-term gains associated with research despite the short-term inconveniences associated with data collection.
- Measures to assess the impact of CBPR should be built into studies when possible.

Questions & Answers

Moderator: *Dr. Corbie-Smith*

Dr. Ron Ackermann, Indiana University School of Medicine, Indianapolis, IN, asked if there are preferred ways to begin working with the minority community to conduct CBPR to be able to design a project for the PA. Dr. Ammerman suggested that he check within the university to see if there are researchers already doing this work. Next, seek out community leaders to find out the needs of the community because it is easier to work in an area of perceived need.

Dr. Selby commented on the PRAISE study on stress reduction and building respect for seniors, how this was negotiated for in the control arm, and whether this came in the preparation for the proposal or if it was added later in response to something seen in the initial phases of the study. Also, were outcome measures included from the beginning? Dr. Ammerman responded that the intervention was not pre-planned, but a “sham” intervention was included in the control group to keep them involved. She said there was a surprising amount of interest in the intervention and a desire to begin the process on the part of church-based participants prior to the official start of the study and randomization of the churches. Outcome measures were included once the intervention was planned.

Dr. Gilbert Liu, Indiana University School of Medicine, Indianapolis, IN, asked how the project was sustained after the grants ended. Dr. Ammerman said this is a big issue, and most funding agencies have not thought about this. However, since the focus of many granting agencies has turned toward dissemination and translation, this is changing. It also is possible to seek funding from the entrepreneurial sector, but there would be a need for a business model to present to the business community. She also mentioned the Small Business Innovation Research program, but the project must have the possibility of commercialization.

Dr. Jan Hanson, Uniformed Services University of the Health Sciences, Bethesda, MD, asked for guidance about Institutional Review Board (IRB) review and human subject protections with regard to research that includes interventions. Dr. Ammerman referred Dr. Hanson to Dr. Carmen Samuel-Hodge, University of North Carolina at Chapel Hill, NC, because she has experience on these issues. She suggested that Dr. Hanson speak to Dr. Samuel-Hodge at lunch or at a break about IRB approvals. Dr. Ammerman also said it is important to speak to someone who knows about requirements for human subjects.

Dr. Ackerman commented that he has experience working with a community partner on a diabetes prevention program. It took almost 12 months working with the partners to develop a proposal that fit the community; part of the time was spent on the randomized design. Once the proposal was submitted, it was not reviewed for 9 months. The entire process took almost 2 years from planning to the beginning of the project, which is a lot to ask of community entities that want a program to begin immediately. He asked if Dr. Ammerman had any advice to help keep the community involved while a project goes through the proposal process. Dr. Ammerman said it is important to keep the community engaged and informed about the review process, and let leaders know that researchers are interested in addressing the needs identified by the community, sometimes even if they are unrelated to the specific research effort.

Session II: Putting It Together: Multifactorial Research

Joseph Selby, M.D., M.P.H., Director, Division of Research, Kaiser Permanente, Oakland, CA

Dr. Selby addressed the topic of health disparities from his perspective as a researcher who works within a large health care system. He noted that the leaders of health care systems want to eliminate disparities because they are genuinely troubled by the disparities in outcomes within their systems, they know that disparities are an increasing focus of attention, and they realize that eliminating disparities will almost certainly improve overall health care quality. As an example

of this focus, he presented the following list of ideas, devised by Kaiser Permanente, about how health care plans can reduce disparities:

- Obtain buy-in at the highest levels for reducing health disparities.
- Link reducing health disparities to quality service provision.
- Collect data on race, ethnicity, gender, education, and socioeconomic status.
- Develop health disparities research frameworks/agendas.
- Conduct research on health disparities.
- Translate findings into practice.
- Measure and report on equity.

Dr. Selby presented research results that indicate that health systems and providers significantly influence quality and disparities. In one study, for example, statistically and clinically significant variability in patients' systolic blood pressures, care experience scores, and low-density lipoprotein cholesterol levels were observed among facilities within a health care system and among patients of different physicians. Although the percentage of total variability explained by facility and physician factors is small, these factors account for important differences in performance, suggesting that interventions at both the facility and physician levels can be of value. When efforts are made to improve quality, variability among facilities and to a lesser extent, variability among physicians usually declines.

The principles and difficulties seen in CBPR, as discussed by Dr. Ammerman, are also encountered in research within health care systems. In fact, for the purposes of research, it may be best to view health care systems not as avenues to communities but as communities themselves. As an example, Dr. Selby described a study conducted within Kaiser Permanente that involved identification and intensification of treatment of patients with diabetes who were considered the most promising candidates for such an intervention because their diabetes was poorly controlled despite good adherence to therapy. As the study progressed, it became necessary to adjust the eligibility criteria for participation based on feedback from the participating physicians, who found that too few patients were meeting the initially established criteria. Similar situations often occur in CBPR studies, where experience within the community may prompt modification in the design or implementation of a study protocol.

Dr. Selby advised that when conducting research on disparities involving health care systems, it is valuable to share data with the practitioners within the system, to make certain that the intervention's goals match the system's priorities, to identify leaders within the system and include them as internal collaborators, and to make it clear that support will be present for dissemination of the intervention if it proves effective.

SESSION III: RESEARCH IN PRACTICE: SPECIAL ISSUES

Overview of Session III

Dr. Hunter

Dr. Hunter introduced speakers for Session III and reviewed the topics to be covered.

Research Design Issues

Carol Mangione, M.D., M.S.P.H., Professor of Medicine and Public Health, Department of Medicine, David Geffen School of Medicine at University of California at Los Angeles, CA

Dr. Mangione began her presentation by noting that sampling, recruitment, and retention are among the crucial design issues for health disparities research. Unfortunately, the literature provides little guidance about best practices for recruiting participants from historically underrepresented groups. Barriers to recruitment and retention at the researcher level can include failure to gain trust of the community and to establish credibility, lack of sensitivity to health and cultural beliefs, poor communication of the study's rationale and relevance to the participants' community, the complexity of forms and procedures, and the use of time-consuming protocols that do not take participants' competing time demands into account. At the participant level, attitudes, health beliefs, illness, differences in health behaviors, negative perceptions of research, a belief that the findings will reflect poorly on the participants or their community, lack of trust, low health literacy, language barriers, and increasing age and its accompanying comorbidity may all present difficulties in recruitment. Intervening illnesses, death, refusal, inability to locate participants, and competing demands may compromise retention; Dr. Mangione suggests planning for at least a 20 percent loss of participants per year. The use of CBPR approaches may enhance recruitment and retention.

Qualitative study designs are useful when interventions shown to be effective in clinical trials are to be translated to real world settings. Research of this type can identify ways to enhance the acceptability of interventions and decrease barriers to participation.

Randomized controlled trials are the "gold standard" for quantitative research. However, they are time consuming, expensive, and complex, and tight inclusion criteria limit their generalizability. Also, they are unlikely to indicate whether an intervention will improve routine practice. In addition, in disparities research, political, practical, and ethical barriers may make randomized trials impossible, so other study designs need to be considered.

Dr. Mangione presented some results from TRIAD, a non-randomized, longitudinal cohort study of disparities in diabetes care that illustrates some of the benefits and pitfalls of this type of study. In observational studies, it is common for important unmeasured factors that affect both the decision to treat and the outcome to be left out, which may create a situation in which the measured variables act as proxies for other, more important factors. For example, in TRIAD, differences in outcomes between Latino and non-Latino patients might have been due not to being Latino but to some other, unmeasured characteristic that is correlated with being Latino.

Dr. Mangione discussed several analytic methods for removing the effects of selection bias, including treatment effects models, multivariable model risk adjustment (the most frequently used approach), propensity score risk adjustment, propensity-based matching, and instrumental variable analysis (an approach that may not be appropriate for disparities research because it involves adjusting away hidden biases).

In conclusion, Dr. Mangione urged that researchers think carefully about matching the design to the research question and noted that complex statistical approaches to evaluate and control for selection bias in observational designs are promising but require the collaboration of a statistician or economist for appropriate implementation.

Measurement Issues

Ron D. Hays, Ph.D., Professor, Department of Medicine, University of California at Los Angeles, CA

Dr. Hays' presentation focused on key measurement issues in health disparities research, emphasizing the evaluation of reliability, validity, and measurement equivalence.

Health outcome measures are used in several ways: monitoring a population and its subgroups, in clinical trials, in clinical practice, and in observational studies. There are multiple determinants of health outcomes including community factors (such as cultural norms and practices related to health care use), health care organization (processes of care and policies), the actions of health care professionals (e.g., decision making, training, screening/assessment, knowledge, bias), and patient factors (e.g., attitudes, behavior, education, lifestyle).

Health outcomes can be measured using clinical measures (e.g., the percentage of patients with evidence of poor diabetic control) and through patient-reported measures (e.g., the patient's global rating of his or her overall health). Similarly, processes of care can be measured by expert consensus (e.g., whether the percentage of patients with diabetes who have particular diagnostic tests annually meets standards) or through patient reports (e.g., the patient's assessment of communication with the health care provider). Both types of measures capture different information.

Experiences from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Medicare managed care health plan survey illustrate some key measurement issues in disparities research. For example, in an analysis of patients' reports about their care, statistically significant differences were observed between African Americans and whites. However, the effect sizes for the differences were small. In addition, an important issue is the equivalence of the survey data. Significantly higher missing data rates and lower health-plan level reliability were found for African American compared to white survey respondents.

Confirmatory factor analysis and item response theory modeling are statistical methods that provide a sophisticated basis for evaluation the psychometric equivalence of survey data for different subgroups. Dr. Hays presented an example of the use of confirmatory factor analysis to compare health-related quality of life and evaluations of care for English-speaking and Spanish-speaking respondents. Use of item response theory to evaluate differential item functioning was also suggested.

Questions & Answers

Moderator: *Dr. Corbie-Smith*

Dr. Kilbourne asked Dr. Mangione if she has had experience with crossover designs, in particular with brief interventions randomized for a year or so before both groups (randomized and control) get the intervention. Dr. Mangione replied that she has only crossed in that direction in the community. People in the control group for a year were offered the intervention if it was successful in the randomized group.

DAY 2—JULY 1, 2008

WELCOME BACK AND LESSONS LEARNED FROM DAY 1

Dr. Corbie-Smith

Dr. Corbie-Smith explained a change in schedule. To give an opportunity for participants to ask as many questions as possible, he said he would ask a panel of presenters to come forward and address questions from the audience on any topic covered in yesterday's presentations.

PANEL DISCUSSION

Drs. Selby, Chin, Mangione, Gregg, Taveras, and Dietz

Dr. Judith Long, University of Pennsylvania, Philadelphia, PA, asked a methodologic question. The PA was written to encourage projects to reduce disparities, but it is difficult to get a study with enough power to show there is a disparity and successful intervention between two race groups. It is easier and less costly to study an intervention that reduces disparities targeted to only one group. How can a study be designed to show that an intervention reduces disparities if you need two groups? Dr. Mangione said that it is acceptable to randomize within one group if you know that the disparity exists. If it is feasible to randomize at the individual level it makes sense to target within the group. If an intervention may work in more than one group, then it is possible to randomize by usual care and intervention. Is it possible to mix the groups? Dr. Mangione related the story of a project on an empowerment intervention in Los Angeles to improve self-management skills of older individuals with diabetes that was intended to have African Americans and Latinos in the same group. During the planning phase the Latino group wanted the intervention materials to be in Spanish, which eliminated the possibility of mixing the groups. She said they ended up having separate groups and randomized both samples with a pre-set, stratified sampling plan that had sufficient power to look at each group separately. The study became a more expensive than initially planned.

Dr. Selby added that the question by Dr. Long is a practical dilemma for disparities researchers. There are two questions, one for the disparities group and one for implementing the intervention and whether this would raise awareness and health of all participants in terms of efficacy. This would cost less because efficacy would be investigated in a smaller group at first but then moved to the larger group if found to be effective. Dr. Chin added that the vast majority of researchers do not have access to the large number of patients that researchers at large, managed care institutions, such as the situation at Kaiser, so it becomes difficult to accrue enough participants to have the statistical power needed for these studies. He said it is important to develop model programs to improve the care and outcomes of minority populations, but translation and dissemination among a larger pool is a different thing. There is a need for new models for these larger pools of individuals.

Dr. Boan asked for the opinions of the panelists about using physicians to disseminate weight reduction information. The intervention would be between physician groups; some would implement the intervention, some would not. Dr. Selby responded that randomizing by

physician office allows you to study questions at a dissemination level. Whether matching should occur depends on randomization, if there are enough physicians. If the group is small, you must stratify on a few characteristics and then randomize so stratification is across the control-intervention groups. Dr. Taveras interjected about her experience with physicians in a study in Boston on weight loss in pediatric patients. Physicians preferred to not be the key intervening clinicians due to a lack of time. In this particular study, the key intervening clinicians delivering the counseling were pediatric nurse practitioners. Dr. Ken Resnicow, University of Michigan School of Public Health, Ann Arbor, MI, described his R01 for an intervention study where he randomizes 36 clinics, which is very expensive. His study uses CD-ROM technology and the Internet to train physicians and other office personnel. This has helped cut costs and gives an opportunity for someone other than the physician to implement the intervention. Dr. Mangione added that physicians are traditionally unqualified for giving advice on weight management. Dieticians or health educators can implement quality interventions with a few hours training, and this would increase the effectiveness of the messages. It also is possible to match the educators with the patients. Dr. Joan followed up by commenting about the difficulty of maintaining sustainability of interventions once the study is completed.

Dr. Ida Spruill, University of Iowa, Iowa City, IA, commented that health disparities are multifactorial and there is a need to look at the causes of disparities and reframe the questions to determine the factors that cause the disparities before moving to interventions.

A participant commented that Dr. Selby had described how you could look at differences in practice patterns to see how physicians deal with disparities. It may be interesting, because the literature is rather sparse, to find out if physicians practice differently within context of disparities, such as patients who are not very literate. Dr. Dietz responded that studies have shown physicians who have good lifestyle habits tend to counsel patients on good lifestyle choices more than physicians with poor lifestyle habits. Physician bias and their perceptions of patients based on their weight (e.g., obesity) can carry over to physician behavior. Dr. Chin noted the current efforts to look at variations in physician practice and differences in the community environment. The deficit and asset models are being used in this effort to identify what common problems occur in the environment (e.g., how many supermarkets serve the local community). The participant said that it is possible to look at variation in practice by looking at A1C levels or blood pressure levels in patients at different clinics, but when you see differences you need to dig deeper to determine what underlies those differences; physician practice may be only one factor. He added that they have never looked at patient behavior based on physician characteristics.

A participant commented on the presentations on CBPR, and the fact that health care systems may be equivalent to communities as described by other presenters. Upon further reflection, however, it appears that the issues that are the focus of QI research follows CBPR methods. She asked if using CBPR as a framework to determine the value-added in health systems. Dr. Selby affirmed that health systems have a very strong culture and a set of pressures and priorities, and a researcher will not get far unless he or she take these factors into account. From a QI perspective, it is impossible to force something on physicians at Kaiser. Academic researchers coming into the health system need to be aware of this.

Dr. Andrew Karter, Kaiser Permanente, Oakland, CA, commented about the measurement of disparities. He noted a recent paper in *Health Affairs* by Hebert et al. that discussed different ways to conceptualize disparities. In managed care settings, such as Kaiser, patterns of disparities are not consistent across complications from diabetes. For example, whites have the largest number of MIs and Asians have the lowest rate of amputations. He asked the panel to address these differences and to discuss how to conceptualize disparities. Dr. Gregg noted that one way to reduce disparities is by making the group with no disparities worse, thus shrinking the magnitude of the gap; this is not the preferred way to reduce disparities but demonstrates that the problem needs a pragmatic strategy. One such strategy is to develop methods that systematically identify an “optimal realistic” goal for the outcome and move groups toward that goal. Reducing one disparity can lead to another disparity in a different area. Dr. Karter asked if the target is always the most vulnerable group. Dr. Selby commented that health disparities are generally listed in practical terms, usually showing the vulnerable or disadvantaged group is doing worse. In addition, genetics is an issue for some disparities and biological factors should be considered when planning strategies. Dr. Mangione said that in managed care settings it may be more difficult to identify disparities compared to measuring disparity in the 45 million individuals who do not have insurance, an issue that will need to be addressed at the policy level.

Dr. Ellie Daniels, Morehouse School of Medicine, Atlanta, GA, commented that whether one is talking about reducing or measuring disparities, multiple factors must be considered in developing a grant application. When the application undergoes peer review, it invariably gets criticism because the review panel wants one approach rather than methodologies that address multiple factors. Dr. Mangione responded that a growing body of literature is reporting that trying to change one behavioral factor does not work and that strategies must be developed to address multiple factors. New models, such as the PROCEED model, uses this multifactorial approach. The challenge is thinking about who will be the control group and whether outcomes can be identified before implementing a multifactorial intervention. It is important to make sure the control groups are not exposed to the interventions. Dr. Chin also interjected that it is important that projects are written so that specific dissemination and translation modalities will apply to other communities and situations, and that it is not too specific for the studied population. Dr. Selby agreed that researchers should provide evidence that the condition being studied is multifactorial, and he added that it is important to have a conceptual model in the application.

WRAP-UP OF DAY 2

Dr. Corbie-Smith thanked panelists and participants for a stimulating discussion.

Dr. Hunter explained that the remainder of the morning session involved a series of breakout sessions. The breakout sessions addressed the following:

- Special issues within/across racial and ethnic groups that are known to have disparate diabetes and obesity health outcomes
- Potential for healthcare partnering with others (i.e., day care, community, employers)
- Measurement: Identifying salient processes and health outcomes.

The breakout schedule included the following topics and speakers.

BREAKOUT 1: SPECIAL ISSUES ACROSS THE LIFESPAN

- (1) Children and Adolescents—Steven Gortmaker, Ph.D., Harvard School of Public Health
- (2) Adults—Joseph Selby, M.D., M.P.H., Kaiser Permanente
- (3) Elderly—Carol Mangione, M.D., M.S.P.H., David Geffen School of Medicine at the University of California at Los Angeles

BREAKOUT 2: AREA OF RESEARCH FOCUS: METHOD/DESIGN ISSUES

- (1) Interventions in Adults and Children—Carmen Samuel-Hodge, Ph.D., M.S., M.P.H., R.D., University of North Carolina at Chapel Hill Schools of Medicine and Public Health
- (2) Cultural Tailoring and Audience Segmentation—Kenneth Resnicow, Ph.D., University of Michigan School of Public Health
- (3) Data Linking and Analysis with Multiple Levels of Data—Nicole Lurie, M.D., M.S.P.H., Center for Domestic and International Health Security, RAND Corporation