

# **New Directions in Obesity Prevention and Treatment**

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Robert Wood Johnson Foundation

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**Childhood Obesity Work at the Robert Wood Johnson Foundation**

In 2007 the Robert Wood Johnson Foundation (RWJF) announced a commitment of at least \$500 million to help reverse the childhood obesity epidemic by 2015. To reach this goal, RWJF is working with partners to improve access to affordable, healthy foods and increase opportunities for physical activity in schools and communities across the nation.

RWJF has developed three integrated strategies to reverse the childhood obesity epidemic:

- **Evidence.** Investments in building the evidence base will help ensure that the most promising efforts are replicated throughout the nation.
- **Action.** The action strategy for communities and schools focuses on engaging partners at the local level, building coalitions and promoting the most promising approaches.
- **Advocacy.** Sharing results from the evidence and action strategies by educating leaders and investing in advocacy, will build a broad national constituency for childhood obesity prevention.

**AcademyHealth and Obesity Prevention and Treatment**

Based in Washington, AcademyHealth is the professional home for health services researchers, policy analysts and practitioners, and a non-partisan resource for health research and policy.

The annual research meeting brings together health services researchers, providers and key decision-makers to address the critical challenges confronting the health care delivery system. In 2008, for the first time, AcademyHealth featured obesity prevention and treatment as one of the annual research meeting themes.

**Report Structure**

This report presents brief summaries of the 19 presentations in four Obesity Prevention and Treatment sessions and the ensuing discussions. Tracy Orleans, Ph.D., a Distinguished Fellow/Senior Scientist at the Robert Wood Johnson Foundation, co-chaired one of these sessions.

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**Childhood Obesity: Implications for Health Services**

Session Chair: Lisa Simpson, M.B., B.ch., M.P.H., director, Child Policy Research Center, Cincinnati Children's Hospital Medical Center

**Mental Health Problems and Obesity in a Nationally Representative Sample of Adolescents: Effects of Race/Ethnicity**

Rhonda BeLue, Ph.D., an assistant professor of health policy and administration at the Pennsylvania State University, presented a study examining the relationship between mental health problems and weight in 35,184 youth ages 12 to 17 years (76 percent White, 17.9 percent African American and 5.7 percent Hispanic).

The researchers used data from the Centers for Disease Control and Prevention's (CDC's) 2003 National Survey of Children's Health to examine three dimensions of mental health and well-being:

- Anxiety and depression and stress coping
- Self-worth
- Behavior problems.

They measured these dimensions using:

- The height and weight of the children, as reported by the parents
- Body Mass Index (BMI)
- Weight classifications: underweight, normal, overweight or obese.

#### **Key Results**

- Reported mental health problems increased with BMI classification.
- The relationship between mental health problems and overweight/obesity in youth differs by race/ethnic group. For example, of those who were overweight or obese, 11.7 percent White, 8.8 percent African American and 18.5 percent of Hispanic youth had a problem with depression or anxiety.

#### **Conclusions**

- Health services and public health programs that target overweight/obese youth should be aware of potential co-morbid mental health problems and that race/ethnicity may play a role in the relationship between mental health and overweight status.

#### **Physician Obesity Counseling: Are Adolescents Getting an Earful?**

In 2007 the American Medical Association (AMA) recommended that physicians:

- Screen weight status of children and adolescents annually using BMI
- Qualitatively assess dietary patterns and activity levels at each well-child visit
- Counsel children ages 2 to 19 having BMI above the 85th percentile (and their parents) to change the children's dietary habits and physical activity.

Lan Liang, Ph.D., an investigator at the Agency for Healthcare Research and Quality, presented a study that assessed physician practice in this regard from 2001 to 2005. Researchers analyzed data from the Medical Expenditure Panel Survey on 10,199 children ages 11 to 17 with at least one doctor visit during the year.

#### **Key Results**

- Less than half of children ages 11 to 17 get advice from health care providers on healthy eating and physical activity.
- Children at risk for overweight were less likely than overweight children to receive obesity-related advice, but physician counseling might be most effective for the at-risk group.

## **Conclusions**

- Greater efforts could be made to incorporate recommendations from the new AMA guideline on childhood obesity screening and counseling into clinical practice.

## **Assessing School-Level Factors Contributing to Physical Fitness of Georgia's Children and Youth**

Inas Rashad, an assistant professor of economics at Georgia State University, and colleagues analyzed the effect of school practices regarding physical education (PE) on the physical fitness of 5th and 7th graders as measured by the Georgia Youth Fitness Assessment. At 93 elementary and middle schools, 5,248 students participated in either the fitness testing or the physical activity survey.

The researchers reported on how school-level factors impacted cardiovascular health, and the students' cardiovascular fitness and flexibility and strength. The school-level factors included:

- Requiring PE (48 percent of the schools)
- Meeting time requirements for PE (13 percent of the schools)
- Using PE as punishment for poor behavior (35 percent of the schools)
- Providing free intramural opportunities for children (63 percent of the schools)
- Not exempting students from PE for reasons other than health or religion (16 percent of the schools).

The fitness testing included:

- PACER (progressive aerobic cardiovascular run) for cardiovascular fitness
- Four tests of muscular strength, flexibility and endurance: modified pull-up, curl-up, back-saver sit and reach, and trunk lift.

## **Key Results**

- Requiring PE, meeting time requirements for PE, not exempting students from PE for reasons other than health or religion and providing free intramural opportunities for children were all significantly associated with improved cardiovascular fitness.
- The strongest effects for fitness were seen for PACER and modified pull-up and curl-up.

## **Testing the Feasibility of Performance Measures for Childhood/Adolescent Obesity**

Sarah Sampsel, M.P.H., a research scientist at the National Committee for Quality Assurance (NCQA), described a field test to evaluate the feasibility of a nationally standardized performance measure in HEDIS focused on improving quality in childhood/adolescent obesity care. (HEDIS is the Healthcare Effectiveness Data and Information Set.)

The measure looked at the percentage of enrolled members, 2 to 17 years of age, with documentation of BMI percentile in the medical record during the year. The field test also included data collection about documentation of advice or counseling

for physical activity and nutrition. Three health plans (covering commercial and Medicaid enrollees) participated, providing data on 560,754 children.

### **Key Results**

- Rates of documentation of BMI percentile for children/adolescents were extremely low: 1 percent in 2005 and 1.5 percent in 2006.
- 68.1 percent of children/adolescents received nutritional counseling.
- 44.5 percent of children/adolescents received counseling about physical activity.

After the field test, the NCQA developed the following proposed HEDIS measure:

“Percentage of members, ages 2 to 17 years of age who had an outpatient visit with a PCP or OB/GYN and evidence of the following during the measurement year:

- BMI Percentile Assessment
- Counseling for Nutrition
- Counseling for Physical Activity.”

As of June 9, 2008, the proposed HEDIS measure was awaiting final approval, followed by publication in *HEDIS Volume 2* in July 2008. Plans will report the measurement in July 2009. First-year aggregate results will be available in September 2009.

### **Cost and Health Impact of Childhood Obesity in Medicaid/SCHIP Enrollees**

To inform state policy and guide program development and investment in obesity prevention, researchers in Arkansas studied the extent to which obesity was associated with impaired health, increased health care use and higher health care costs among children and adolescents enrolled in Medicaid/SCHIP.

Joseph W. Thompson, M.D., M.P.H., surgeon general for the state of Arkansas, director of the Arkansas Center for Health Improvement, and an associate professor of pediatrics at the University of Arkansas for Medical Sciences, described the study, which matched 2004 BMI assessments by the Arkansas public schools to Medicaid eligibility files.

The researchers analyzed health status (associations of select conditions with obesity represented by risk ratios) and utilization and costs (days of service and claims paid). The study sample included 127,839 children for the risk ratio calculations and 60,928 for the annualized cost and use calculations.

Since the researchers are planning to publish the study results, they are not reported here.

### **Conclusions**

The study suggests:

- Increased risk ratios for adult conditions in children and adolescents with known associations with obesity (e.g., type 2 diabetes)
- Increased risk ratios for many common conditions (e.g., asthma) and select surgical procedures (e.g., tonsillectomy)

- A marginal difference in use of health care services between overweight and normal weight children
- Significantly higher cost for overweight children, particularly adolescents, compared with normal weight children
- Challenging implications for state and federal health insurance programs:
  - Existing costs are spread over many conditions
  - The life cycle of obesity risk accrues costs in adulthood.

## Discussion

*Comment:* Only physicians or nurse practitioners, not nurses, can be reimbursed for counseling. Providing reimbursement for nurses to counsel patients would give incentive for real counseling to occur.

*Answer (Thompson):* In many states that have a Medicaid managed care plan, the plans have taken on responsibility for obesity counseling.

*Answer (Sampsel):* As long as there's documentation in the medical record, it doesn't matter who does the counseling. In reality, we probably will see it from a nurse or a nurse practitioner and that's fine.

*Answer (Simpson):* Some states are reimbursing for counseling; it's not across the board yet.

*Comment (Tracy Orleans, Robert Wood Johnson Foundation):* These are excellent papers, which document where we are now. I'd like to propose that we take a look two years from now and hear from even the same group of panelists about what has changed and what they think needs to be done.

*Answer (Simpson):* That's a great suggestion. We're very good at describing the world but less good at describing what we can do in terms of changing our world.

*Question:* What do you make of higher rates of counseling given that people aren't assessing BMI and counseling is supposed to be contingent on assessment of risk? Is it too easy to get credit for counseling?

*Answer (Sampsel):* We did allow a lot of leeway for assessment of counseling. There was a much broader list of things that would have counted toward that measure.

*Comment/Question (Orleans):* We all know the 5 As for health behavior change counseling; we probably need a sixth: advocate for changing the environment in the community. Do you think that's a direction that NCQA will go—measuring health plan involvement in advocating for changes in the food and physical activity environment in their communities?

*Answer (Simpson):* We recognize that a lot of these conditions are community conditions, public health conditions. That's something we're starting to think about, especially with children's health. We're starting to think about how we improve the quality of care at a community level rather than a plan level.

*Question:* Why have we become obese?

*Answer (Simpson):* After reading a paper about this in *Children's Futures*, I came away thinking that we don't know the answer. Another paper said obesity is the equivalent of one soda a day.

*Answer (Thompson):* There are three potential hypotheses: genetic change, metabolic change in our body systems, or exogenous change within the world in which we live. It's hard to come up with a plausible scenario for the first two.

If we have limited resources to invest, we want to understand the exogenous variables so we can get back to a healthy environment. There is a prioritization among the non-NIH funding community on exogenous variables.

What's changed? There are more single-parent families; cable TV, electronic games and other entertainment; more transportation by cars; fast food; and energy-dense food. All of these things represent influences on the family.

At one level up, there have been societal changes supported through school lunch programs, No Child Left Behind, and health plans focusing on sick care rather than preventive care. The health services community can be powerful in helping advocate for responding to the epidemic in an effective manner.

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## **New Paradigms in Obesity Treatment and Prevention**

*The First Invited Presentation on Obesity at the AcademyHealth Annual Research Meeting*

Session Co-Chairs:

Tracy Orleans, Ph.D., Distinguished Fellow/Senior Scientist, Robert Wood Johnson Foundation

William Dietz, M.D., Ph.D., director, Division of Nutrition and Physical Activity, Centers for Disease Control and Prevention

### **Introduction**

Orleans noted that efforts to address the obesity epidemic require a new paradigm that focuses on changing the environments in communities to provide people access to healthy and affordable food and safe places for physical activity. This work is being guided by earlier work to reduce the use of tobacco, which had a strong policy and environmental focus from the start. Changing environments in communities with the highest obesity prevalence is important.

The Chronic Care Model, developed by Dietz (*Health Affairs*, 26: 430, 2007), provides a framework for defining core elements of comprehensive initiatives that link clinical and health care system interventions with community programs and policy-environmental supports.

### **Adult Obesity Prevention and Treatment**

Nico Pronk, Ph.D., described HealthPartners' approach to obesity prevention and treatment, as well as two specific initiatives: telephone-based health coaching weight management support and the bariatric surgery network. Pronk is vice president of health management and a health science officer for JourneyWell, as well as a senior research investigator for the HealthPartners Research Foundation.

To inform HealthPartners' work, researchers conducted a systematic review of studies to identify lifestyle strategies and/or treatment components that contribute to successful weight management. They found that diet and exercise combined with meal replacements and pharmaceutical interventions were the most effective strategies and treatments.

HealthPartners created an approach to obesity prevention and treatment based upon:

- Creating supportive environments in worksites, clinics and the care system, health plans and communities
- Providing individual behavior change solutions using multiple modalities: the World Wide Web, telephone, mail and groups.

Two strategies were very effective:

- Paying for performance in BMI assessment: By providing incentives to HealthPartners' medical staff, BMI assessment increased from 20 percent to 58 percent.
- Prescriptions for exercise: People in the 10,000 Steps® program walked more than before they started the program and lost weight.

### **The Telephone Support Initiative**

Researchers compared three HealthPartners telephone-based health coaching weight management interventions:

- Weight-To-Be Trial, a randomized controlled trial with telephone-based intervention (N=600) (Jeffery, et al. *Int J Obes Relat Metab Disord*, 27: 1584–1592, 2003)
- Weigh-By-Day Trial, a randomized controlled trial with telephone-based intervention and a home-based scale and telemonitoring device for daily weigh-ins (N=100) (VanWormer, et al. Manuscript in press as of September 2008, *American Journal of Health Behav*)
- Worksite-based experience, real-world implementation of telephone-based coaching for weight management across multiple employer groups, as one of many health promotion options (N=2,158) (Boucher, et al. *Diabetes Spectrum*, 3: 190–192, 2000).

Participants in the Weigh-By-Day Trial lost more weight (10 pounds) than those in the Weight-To-Be Trial (eight pounds). Self-weighing was an effective strategy for weight loss:

- Participants lost about five extra pounds of weight for every 30 percent increase in daily self-weighing.
- Participants who weighed themselves at least weekly had a 27.5 times greater odds of losing at least 5 percent of their baseline body weight.

In the worksite-based experience, participants in the weight loss program lost about eight pounds. Support from co-workers who might be in the same or other health promotion programs was an important part of this intervention.

### **The Bariatric Surgery Network**

To improve outcomes and quality of care, HealthPartners created a weight loss surgery network that selected providers based on experience, dedicated bariatric

practice, volume, services, access, outcomes and cost. The network collects outcomes data and provides educational support before and after bariatric surgery.

Although the program is new, researchers believe that it is a success based upon six months of data. For example, among participants who completed the educational support program:

- Body image satisfaction improved 19 percent.
- Understanding of the risks and benefits of bariatric surgery increased 78 percent, with a 63.5 percent increase in participants having excellent knowledge.

### **Health Policy Guidance**

Based on HealthPartners' experience, Pronk made the following suggestions to guide health policy in obesity prevention and treatment:

- Use BMI as a vital sign.
- Develop a weight-loss surgery network.
- Provide pre-post surgery health education and health behavior support.
- Design insurance benefits with program options of varying intensities, such as exercise prescriptions, telephone-based coaching and weight loss surgery support.

### **Overweight Children: A Comprehensive Approach to Address the Epidemic**

Scott Gee, M.D., medical director of Prevention and Health Information for Kaiser Permanente Northern California, described the organization's three strategies to address overweight children:

1. Medical office visit interventions
2. Weight management interventions
3. Environmental changes and physician advocacy.

Kaiser Permanente is focusing on communities with the highest prevalence of obesity and used its tobacco cessation strategies to guide its obesity strategies. For example, one of the tobacco cessation strategies was for physicians to advise smokers to quit during office visits. In the obesity work, physicians are measuring BMI.

#### **1. Medical Office Visit Interventions**

Improving office systems, including facilitating measurement of BMI, training staff to use these systems, and quarterly performance audit and feedback to physicians comprise the medical office visit interventions. Before implementation of the medical office visit interventions, about 11 percent of well-child visits included BMI measurement. From 2003 to 2005 this increased to more than 85 percent.

#### **2. Weight Management Interventions**

Kaiser Permanente developed a weight management program with options ranging from counseling to bariatric surgery. The interventions and resources are matched to the population. For example, high-intensity interventions such as bariatric surgery are available at a few facilities while medical-office intervention is available

at all facilities. Programs are also appropriate for each population in terms of language and culture (e.g., programs are available in Spanish in Fresno).

There were many challenges with the weight-management interventions. Children do not like Weight Watchers, which they consider to be more “school”; they also dislike using pedometers. Only about 5 percent of overweight children attended a weight loss program.

### **3. Environmental Changes and Physician Advocacy**

This strategy is based upon improving care across California and improving the health of communities, including by training health professionals. Two key programs include:

- The Community Health Initiative, a \$4.5 million, five-year program to transform the environment and social norms of three Northern California communities (Richmond, Santa Rosa and Modesto) to support healthy eating and active living.
- Physicians for Healthy Communities, a statewide advocacy training program to help health professionals promote healthy eating and active living throughout California. The program includes an advocacy toolkit, a speaker’s bureau and community initiatives.

### **Linking Clinical, Public Health and Policy Strategies**

The California Endowment is engaged in a comprehensive, statewide effort involving multifaceted interventions, public policy, community action, research, prevention in both health care and community settings, and communications to improve access to healthy food and safe places to exercise and play.

George R. Flores, M.D., M.P.H., senior program officer of the Healthy Communities/Disparities in Health Program, described this effort, which shifts the focus away from individual behavior to environments and policy. The California Endowment is focusing on environments and policy because little innovation was occurring in these areas. Staff members are working with people focused on behavioral interventions to ensure that the approach is comprehensive.

The policy targets are:

- Joint use of school grounds (where school facilities are also used by community members for social, recreational and civic activities)
- Community gardens
- Access to affordable fresh produce
- Recreation centers, parks and trails
- Safe, complete streets and rapid transit
- Smart growth and clean air
- Limited fast-food outlets
- Health elements.

To move practice to policy, The California Endowment is working with sites, consultants, sectors (neighborhoods, schools, after-school programs, health care and marketing/media), local policy decision-makers and advocates (state and national). The goal is to build a large group of advocates in each place to change local policy and practices, and create momentum for changing state and national policy.

As a result of the work to date, places look different. For example:

- Schools are serving healthy drinks and meals.
- Teachers are being trained to teach physical education to encourage kids to be active throughout the day.
- Corner stores sell fresh produce.
- There are new/improved park facilities.

### **The California Convergence**

The California Endowment is also part of the California Convergence, in which grantees (from The Endowment, Kaiser Permanente and other funders), the public health department and schools are working together to improve the food and physical activity environments.

The California Convergence focuses on policy and systems change in neighborhoods, schools, after-school programs, health care and marketing/media. It includes technical support, shared messages/communications, support for research, statewide policy advocacy and participatory evaluation.

### **Discussants**

Discussants Sylvia Stevens-Edouard, M.S., senior director of Children's Health Initiatives at Massachusetts Blue Cross Blue Shield and Charles Homer, M.D., M.P.H., chief executive officer of the National Initiative for Children's Healthcare Quality, made brief presentations.

### **A Corporate-Wide Commitment: Not Just Doing Good, but Good Business**

Stevens-Edouard, described the Jump Up & Go! program to combat childhood obesity. Jump Up & Go! translates research into practice and has reached about 500,000 children.

The program started out providing grants to community organizations and schools for nutrition and physical activity programs. It has evolved to include clinical tools for providers and coordination of community/clinical resources.

Programs and campaigns include the 5-2-1 message for families (five fruits and vegetables, two hours or less of TV time and one hour of physical activity each day) and Healthy Choices, an educational program for middle schools. Activities to support providers include the HealthyCare for HealthyKids Collaborative, a learning collaborative with the National Initiative for Children's Healthcare Quality designed to determine the role of clinicians in the childhood obesity intervention process.

Massachusetts Blue Cross Blue Shield was the first health plan in the nation to offer incentives to physicians for measuring BMI. The plan reimburses them for

BMI measurement and counseling. About 75 percent of the physicians eligible for the incentive program are measuring BMI and counseling patients.

### **The Childhood Obesity Action Network**

Homer described the Childhood Obesity Action Network, a health care campaign launched in 2007 with the goal of reversing childhood obesity in all 50 states in 10 years.

The largely virtual Childhood Obesity Action Network links health professionals, policy-makers and other interested parties. It includes more than 2,000 health professionals in 50 states in the United States and 29 countries. The five major sponsors are: the Robert Wood Johnson Foundation, The California Endowment, Nemours, Kaiser Permanente and the HSC Foundation.

The network is designed to enable members to share information and tools related to three major areas: clinical improvement, community advocacy, and state and federal policy. Strategies are:

Practices, clinics and hospitals: providing tools, training, support, and national and local champions to improve health care in:

- Communities: providing training and supporting clinicians as advocates to achieve environmental improvement
- States: supporting policy research, analysis and communication to impact policy.

### **Discussion**

*Question:* How did you get hospitals and corner stores to sell healthier food?

*Answer (Flores):* It was a personal approach. For example, a bunch of kids walked into a Wal-Mart and said they didn't like the kind of foods they were selling.

*Question:* Health impact assessment is a tremendously powerful tool. How can the health services research field contribute and advance health impact assessment?

*Answer (Flores):* Health impact assessment takes into account research that has been done to create an evidence base to convince policy-makers that particular interventions could have merit and would be worthwhile. We have found that places are making decisions based on health impact assessments. The field of transportation is particularly fertile right now for research that points to policy options.

*Question:* There isn't much discussion about cost savings or return-on-investment or other potentially measurable cost-related issues. What do the panelists have to say about that?

*Answer (Gee):* Most preventive services across the world are not cost effective except for childhood vaccinations. If you look at a business-case approach for childhood obesity, it doesn't work out well. The return-on-investment is pretty low.

For adults, particularly in the worksite setting, there's been some interesting work. A lot of employers feel it's a pretty good return-on-investment. The adult obesity literature provides you with a better argument than the child obesity literature.

*Answer (Homer):* The rationale is that the health consequences—and the costs—take a while to occur.

*Answer (Stevens-Edouard):* The most successful programs for us were the family interventions. The family dynamic is what's really at play. We're looking at doing a Jump Up and Go! in the workplace to talk about what parents need to do so their children can be healthy. One of the measures we're looking at is the health status of the employee and whether that changes.

*Answer (Pronk):* The health-related impact needs to be there before you can talk about return-on-investment. When you focus on obesity, the contextual approach that makes the most sense is the worksite setting. That tends to generate good outcomes in terms of health and general investment. There are enough examples in the literature to make a good case.

For weight management or obesity treatment, it's tough. Taking that to childhood obesity is even more difficult.

*Answer (Dietz):* Many employers are unconcerned about return-on-investment for obesity. They think it will make a difference in quality of life and see it as an employee benefit rather than a health intervention.

*Question:* Are there any clinical trials testing alternative interventions, for example, taking out vending machines in some schools and improving lunch in others, to look at the differential effects?

*Answer (Orleans):* RWJF supports a research initiative called *Bridging the Gap*, which has representative samples of elementary, middle and high schools and data from school policies. It's not a randomized controlled trial. It's really hard to assign some schools to one thing and others to another. We're trying to learn which constellation of policies is associated with the greatest impact.

We use the energy gap ruler: reducing the gap between excess calories in and calories out through these interventions. If we can do that, we can equalize physical activity and healthy eating interventions. We should see these data soon. They will show natural variation.

*Answer (Gee):* It's not a fully randomized design, but we do have control sites for our school evaluations.

*Answer (Stevens-Edouard):* We looked at the tipping point. There seems to be a convergence where a certain amount of activity makes a difference. I don't think it's going to be a one-variable thing; it's going to be many things that need to occur to make a change.

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## **Costs and Consequences of Adult Obesity**

Session Chair: William Dietz, M.D., Ph.D., director, Division of Nutrition and Physical Activity, Centers for Disease Control and Prevention

### **Comorbidities, Health Care Use, Health Care Costs, and Health Behaviors by BMI**

Researchers at Johns Hopkins University are studying obesity care patterns in partnership with the Blue Cross Blue Shield Association and seven Blue Cross Blue Shield plans.

Suzanne M. Goodwin, a doctoral candidate at Johns Hopkins Bloomberg School of Public Health, presented preliminary results from one part of the study, which assessed the association between BMI and comorbidities, health care utilization, health care costs and health behaviors. Researchers analyzed 2002–2005 claims and health risk assessment data from 71,058 enrollees in three plans.

### **Preliminary Results**

- 35 percent of enrollees were overweight, 20 percent were obese, and 3 percent were morbidly obese. Some 40 percent were normal weight and 2 percent were underweight.
- Overweight, obese and morbidly obese enrollees had significantly higher rates of hypertension, dyslipidemia and diabetes than normal weight enrollees. The greatest increases were seen in the rates of hypertension and diabetes.
- Some 7 percent of morbidly obese enrollees had at least one hospital stay, compared with 6 percent of obese enrollees, 5 percent of overweight enrollees and 4 percent of normal weight enrollees; these differences were statistically significant.
- Health care costs for normal weight enrollees averaged approximately \$2,800 compared with \$4,300 for morbidly obese enrollees.
- Morbidly obese enrollees were 70 percent less likely to exercise than normal weight enrollees.

### **Conclusions**

- Obese people are more likely to have comorbidity, be hospitalized, have higher health care costs and engage in unhealthy behaviors than other people.

The findings will help:

- Health plans understand how obesity is affecting their members' health and use of health care resources as well as the impact of obesity on the plans' costs.
- Providers, health plans and employers identify which conditions to focus on for disease prevention and management programs.

### **Assessing Weight Through Documentation of Body Mass Index in Health Plan Populations**

Sarah Sampsel, M.P.H., a research scientist at the National Committee for Quality Assurance, described a field test to evaluate the feasibility of a performance measure in HEDIS to assess weight. The expert panel that developed the measure was guided by the National Institutes of Health obesity treatment algorithm, which highlights components of care that can impact quality. The measure is:

The percentage of members 18–74 years of age who had an outpatient office visit and who had their body mass index (BMI) documented in the measurement year or year prior.

Three health plans (covering commercial, Medicaid and Medicare enrollees) participated in the field test, providing data from 543,493 administrative records and 604 medical records.

### **Key Results**

- 30.6 percent of enrollees had their BMI documented during office visits (based on administrative records).
- There were no meaningful differences in BMI versus height/weight documentation based on medical records:
  - 20.5 percent of enrollees had their BMI documented.
  - 28.6 percent of enrollees had both height and weight documented.
  - 28.8 percent of enrollees had either BMI or both height and weight documented.

### **Conclusions**

- There is significant potential for improvement in tracking and monitoring BMI in adults.
- Holding health plans accountable for working with clinicians to measure and document BMI is only the first step in combating obesity.

As of June 10, 2008, the proposed HEDIS measure was awaiting final approval, followed by publication in *HEDIS Volume 2* in October 2008. Plans will report the measure in July 2009. First-year aggregate results will be available in September 2009.

### **How Big a Problem is Obesity for the Medicare Program?**

About 25 percent of Medicare beneficiaries are obese. Bruce Stuart, Ph.D., a professor and executive director of the Peter Lamy Center for Drug Therapy and Aging at the University of Maryland at Baltimore, presented a study that:

- Assessed the relationship between BMI and spending on traditional Medicare services and prescription drugs;
- Determined whether spending associated with obesity-related chronic conditions varies across BMI classes (underweight, normal, overweight, obese class I, obese class II and obese class III<sup>1</sup>).

Researchers analyzed data from the *Medicare Current Beneficiary Survey, 1997–2003* for 58,491 person-year observations.

### **Key Results**

- Medicare spent the most money annually on underweight beneficiaries and the least on overweight beneficiaries for traditional services. The difference in the amounts spent on overweight and mildly obese beneficiaries was not statistically significant.
- Spending on prescription drugs increased with BMI class.
- For traditional services, Medicare spent \$690 less on overweight beneficiaries and \$65 more on obese class III beneficiaries than on normal weight beneficiaries.
- For prescription drugs, Medicare spent \$147 more on overweight beneficiaries and \$631 more on obese class III beneficiaries than on normal weight beneficiaries.

<sup>1</sup> Obese class I = 30.0–34.9; obese class II = 35.0–39.9; obese class III = > 40.0.

### **Conclusions**

- There is no evidence that obese beneficiaries were more costly than other beneficiaries to Medicare from 1997 to 2003.
- Prescription spending is significantly higher for obese beneficiaries, particularly among obese class II and III individuals.
- Obese beneficiaries receive fewer and/or less costly traditional Medicare services for obesity-related chronic conditions than normal weight beneficiaries. However, they use more prescription drugs in treating these conditions.

### **Implications for Medicare**

- Rising obesity is unlikely to be a drain on the Medicare Part A and B trust funds.
- Part D costs will rise as the prevalence of obesity in the Medicare population grows.
- The conclusion that obese beneficiaries are under-treated for common chronic conditions deserves careful scrutiny.

### **Health Care Plan Cost Variation by Obesity Classification and Age Group**

Arkansas has the largest state-based insurance plan in the United States, with about 120,000 employees. In 2003 this was a self-insured plan with traditional benefits and no preventive coverage. Joseph W. Thompson, M.D., M.P.H., presented a project to incorporate long-term-management strategies for disease prevention and health promotion into the state plan. Thompson is surgeon general for the state of Arkansas, director of the Arkansas Center for Health Improvement, and an associate professor of pediatrics at the University of Arkansas for Medical Sciences.

The three-phase project consisted of raising awareness through a health risk appraisal, support through new benefits (preventive services, prescriptions, counseling and bariatric surgery) and engagement through discounts for healthy behavior. To justify expenditures in preventive services, researchers analyzed data from the health risk appraisal and claims costs.

### **Key Results**

- Of 43,461 enrollees (based on self-report):
  - 32 percent were obese.
  - 21 percent were physically inactive.
  - 12 percent smoked cigarettes daily.
  - 11 percent had no health risks.
- Average annual total costs (medical and pharmacy) by risk factor:
  - Obese: \$3,679
  - Physically inactive: \$3,643
  - Daily cigarette smoking: \$3,081
  - No health risks: \$2,382.
- Projected average annual total costs for all obese enrollees are about 54 percent higher than costs for enrollees with no health risks.

- There was a marked gradient by BMI and age in claims costs. For example, costs for obese enrollees ages 65 to 74 were 104 percent higher than costs for no-risk enrollees.

### **Conclusions**

- Obesity-related costs increase with age and represent a major opportunity for cost containment and health improvement.
- Costs dramatically increase with age and are differentially higher for those who are obese.
- Cumulative costs stratified by age and obesity classification may inform future actuarial projections for the plan and justify programmatic development.

### **Policy Implications**

- Current health care financing constructs prevent support for early screening, prevention and treatment:
  - Fragmented child, adult and senior support
  - Onset of risk in child/adolescent period; cost impact as adults (maximum for Medicare)
  - Congressional House Pay-Go rules; Congressional Budget Office 10-year window for cost-projections.
- Without attention and a nationwide strategy to prevent and address precipitating behaviors known to cause disease, the financial viability of the health care financing system, particularly Medicare, is at risk.

### **Impact of Bariatric Surgery on Health Care Costs**

The study of obesity care patterns described earlier includes an analysis of the cost and utilization of people undergoing bariatric surgery compared with similar individuals not undergoing surgery in seven Blue Cross Blue Shield plans. Jonathan P. Weiner, Dr.P.H., a professor of health policy and management at Johns Hopkins Bloomberg School of Public Health, presented this part of the study.

The researchers generated a risk model (propensity score) for BMI  $\geq$  35 based on claims data. They then analyzed claims data on:

- 36,080 people who had bariatric surgery (gastric bypass, adjusted band or other) from 2002 to 2006
- A similar group of people who did not have the surgery and who did have certain diagnoses (obesity, diabetes, high cholesterol, sleep apnea, gall bladder disease and metabolic syndrome) and matched enrollment time frame, Blue Cross Blue Shield site, prescription coverage and type of health plan.

They compared annual costs for the surgery and comparison cohorts one year before, two years after surgery, and three years after surgery. Since the researchers are planning to publish the study results, they are not reported here.

For more information, contact Weiner ([jweiner@jshpb.edu](mailto:jweiner@jshpb.edu)).

## Conclusions

- Results to-date do not suggest that there is significant medical care cost savings after bariatric surgery among a large cohort of individuals continuously enrolled for a four-year period.
- There are significant differences in the cost of care by type of bariatric surgery procedure, with adjustable band surgery being the lowest cost and gastric bypass being the highest.

## Implications

- While bariatric surgery is known to lead to health improvements, the preliminary results of this three-year follow-up study do not suggest an overall short-term cost savings among persons undergoing surgery.
- Newer types of surgery (e.g., adjustable banding) are less expensive and will likely have considerable impact on care patterns and cost. Their impact on cost (and outcomes) warrants further research.
- Existing claims data can be used to identify obese persons and populations, and to identify a wide range of interventions, including persons most likely to benefit from surgery.
- Health plan claims analysis, though challenging, can and should become part of ongoing national obesity care policy assessment and monitoring. Long-term follow-up should be a focus.

## Discussion

*Comment (William Dietz):* Nico Pronk, in another presentation, mentioned an analysis of bariatric surgery at HealthPartners and noted that differences in costs showed up at year 3.

*Answer (Weiner):* There's beginning to be consensus that it takes time and you have to look at all costs.

*Question:* Have you looked at mortality differences in passing state employees on to Medicare?

*Answer (Thompson):* No. We wonder whether our sick overweight individuals make it to Medicare.

*Answer (Stuart):* These are workers. I would think it would be the other way around. Obese individuals who for health reasons couldn't work are more likely to be in Medicare.

*Question:* Do you have hypotheses about why obese people do or don't cost more when they're older?

*Answer (Thompson):* Stuart controlled for conditions associated with obesity. There is a question about the aging of the population. He's got an age-defined cohort and I have a work-defined cohort.

*Comment:* In tobacco, everyone said costs would be lower if we could decrease the use of tobacco. We have, but we don't see cost reductions.

*Answer (Thompson):* The justification is that we will have cost avoidance in the future. It shifted our argument from return-on-investment to “we failed to prevent these conditions in the past so now we’re paying for them.” It’s more population management and what we failed to do in the past that led to the new benefits.

*Answer (Stuart):* There is something to the survival issue. If you look at unadjusted data, there’s clearly a difference. There has to be something underlying that. One thing we found is that the percentage of the Medicare population who had prescription drug coverage increased dramatically. Today, less than 10 percent of the Medicare population is without prescription drug coverage. And Joe, your folks have drug coverage?

*Answer (Thompson):* Yes.

*Continuation of answer (Stuart):* Prescription drug use for these chronic conditions is designed to prevent chronic conditions.

*Comment:* One thing we’re not seeing is data about the onset of obesity.

*Answer (Stuart):* Nobody here has data about the onset of obesity. We have a seven-year period in which the proportion rose from about 16 percent to 25 percent. We can track changes over time at the population level. That is not the same thing as having an onset cohort.

*Answer (Dietz):* The changes in obesity are going to give us changes in onset of obesity that we haven’t seen before.

*Question:* In caring for many post-bariatric surgery patients, I see that the sickest people tend to get the surgery first. Are we doing gastric bypass too late?

Also, clinically, for people who are adherent and chosen well, years three to six are the seminal years.

*Answer (Weiner):* Lately, the threshold for bariatric surgery has been changing. For example, in Maryland, it’s mandated. The thresholds do vary by state and plan. With banding and laparoscopic bariatric surgery, that might change.

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**Restricting Food Marketing to Children: The Prospects for Obesity Prevention**

Session Chair: Michelle Mello, J.D., Ph.D., C. Boyden Gray Associate Professor of Health Policy and Law, Harvard School of Public Health

**The Role of Food Marketing in Childhood Obesity Prevention**

“There is strong evidence that marketing of foods and beverages to children influences their preferences, requests, purchases and diets,” according to a 2005 Institute of Medicine report. Food marketing goes from cradle to grave, and the industry spends \$10 billion annually on advertising to children.

Marice Ashe, J.D., M.P.H., provided an overview of the structure of the National Policy & Legal Analysis Network, a RWJF-funded initiative to support policy innovation and implementation by empowering advocates, decision-makers and interested communities with expert technical assistance resources related to law and policy.

Ashe, the director of Public Health Law & Policy at the Public Health Institute in Oakland, Calif., is managing the network. Public Health Law & Policy provides research and analysis on legal and policy questions and develops practical tools such as fact sheets, toolkits and model policies.

Other presenters discussed current research funded by the network.

### ***The National Policy & Legal Analysis Network***

The four major components of the National Policy & Legal Analysis Network are research, governance, evaluation and outreach. Researchers from 10 research institutions are studying law and public health, ranging from food marketing to children to how to use legal tools to address obesity. The network is working in seven policy areas:

1. Marketing to children
2. Childcare/the K–12 school environment
3. The built environment
4. Financial systems
5. Food systems
6. Enforcement
7. Agricultural law.

Network staff and researchers are working with advocates and policy-makers to develop model policies and laws related to obesity prevention. This work is based on the California tobacco-control model, in which dedicated state funding for tobacco control has resulted in very low smoking rates.

### ***Current Research***

Researchers are currently studying the following topics:

#### *1. Marketing to children:*

- Privacy restrictions on digital marketing
- Regulating business conduct
- Federal Trade Commission regulations
- Restricting advertising in K–12 schools.

#### *2. Childcare/the K–12 school environment:*

- A 50-state survey of tort liability law relating to joint-use agreements
- Improved vending contracts for health food options
- The spectrum of enforcement of school policies (e.g., in relation to physical education).

#### *3. Built environment:*

- Implement pedestrian- and bike-friendly zoning.
- Restrict fast-food drive-through restaurants (e.g., within a certain radius of child-oriented areas).

- Require fresh food in corner stores.
- Ensure no “takings” claims (Regulating businesses can lead to takings claims. For example, menus are private property and requiring businesses to add nutrition information takes up space in their private property and can lead to takings claims).

### **Possibilities for Administrative Regulation of Food Marketing**

Mello provided an overview of administrative regulation of food marketing to children and the role that the Federal Trade Commission could play in this.

There are many advantages to administrative regulation, which does not require legislative consensus building and can be achieved relatively quickly. Administrative regulation provides a formal and structured way for public input (through a public comment period) and is relatively easy to modify. Agencies have subject matter expertise. However, there are potentially formidable political barriers to administrative regulation, since agencies tend to reflect the agenda of the current administration.

#### ***The Federal Trade Commission***

The Federal Trade Commission has authority over food advertising and can quash advertisements or require corrections; however, its authority over children’s advertising has been restricted over time. There are two doctrines—unfairness and deception—that could be used to regulate food advertising to children.

Under the unfairness doctrine, a practice is “unfair” if:

- It “is likely to cause substantial injury to consumers.”
- The injury is “not reasonably avoidable” by consumers; and
- The injury is “not outweighed by countervailing benefits” to consumers or competition.

Advertising is “deceptive” if:

1. A claim is made;
2. The claim is likely to mislead a reasonable consumer; and
3. The claim is material.

(Child-oriented advertising is evaluated in light of how the target age group would perceive it.)

#### ***Potential Strategies for Administrative Regulation***

The easiest strategy for Federal Trade Commission regulation is to follow the current path and encourage the food industry to regulate itself. There has been some progress with this, and some companies have changed their advertising to children. Other strategies are to:

- Regulate food advertising to children by using the deception doctrine broadly (i.e., to apply to all advertisements to young children).
- Ask Congress to restore broader authority to the Federal Trade Commission under the unfairness doctrine, which would require substantial coalition building and a change in the Administration.

Other strategies for administrative regulation not related to the Federal Trade Commission are:

- Administrative enforcement of state consumer protection laws, which all states have (these are laws that look similar to Federal Trade Commission regulations)
- Private lawsuits under state consumer protection laws
- School-based marketing restrictions (there are fewer restrictions on regulating schools, where children spend a great deal of time).

### **The First Amendment and Restricting Food Marketing to Children**

The Supreme Court's interpretation of the First Amendment as protecting commercial speech is a barrier to regulating food marketing to children in the United States. Jennifer L. Pomeranz, J.D., M.P.H., director of legal initiatives at the Rudd Center for Food Policy & Obesity at Yale University, provided an overview of other ways to regulate food marketing to children:

1. Compelled speech
2. Government speech
3. Regulating industry conduct
4. Regulating consumer conduct.

#### **1. Compelled Speech**

Although restricting speech is very difficult, compelling speech is allowed and is a viable option for regulating food marketing to children. The government has been compelling speech for many years. For example, the federally-mandated nutrition facts panel and the new menu labeling law in New York state are compelled speech.

Other countries have forms of compelled speech, such as health labels on advertisements in France (e.g., a Lays potato chips advertisement says: "For your health, avoid snacking between meals."). The United Kingdom has uniform product labeling showing the amount of fat, sugar, salt and so forth.

#### **2. Government Speech**

Government speech is used to advocate for and defend government policies. Examples of government speech are the 5-a-day fruit and vegetable campaign by the CDC, United States Department of Agriculture and National Cancer Institute, and the beef "It's what's for dinner" campaign paid for by taxing beef manufacturers. The government could tax food and beverage manufacturers and do a similar campaign about food marketed to children.

#### **3. Regulating Industry Conduct**

Industry conduct could be regulated through:

- Zoning (e.g., restrict fast-food restaurants to certain districts)
- Regulating product location in stores (e.g., produce must be in the front)
- Ingredient bans or caps (e.g., the New York City ban on trans fat)
- Taxing manufacturers to encourage reformulation (e.g., taxes on high fructose corn syrup)

- Adding daily value figures for added sugar in products.

#### **4. Regulating Consumer Conduct**

Consumer conduct can be regulated through:

- Age requirements to purchase items (e.g., soft drinks)
- Per-capita limits on purchases
- Taxing products to discourage consumption
- Banning the sale of products in government buildings such as schools and hospitals.

#### **Regulating “Junk Food” Marketing on Public School Property**

Junk food is prevalent in many schools, and the captive audiences and exclusive contracts are quite important for junk food marketers. Ashe provided an overview of the First Amendment forum test in relation to school regulation of advertising and legal strategies to regulate junk food advertising in schools.

#### **The Forum Test**

Public schools are considered non-public forums: public property that is not open to assembly or debate. As non-public forums, schools can restrict commercial speech. The school’s educational mission trumps everything else and the courts will not dictate what a principal or school district will allow children to be exposed to.

The non-public forum test requires that the restriction be reasonable and viewpoint neutral. In the reasonableness test, a court will ask: Is the policy wholly consistent with the school’s *legitimate interest* (i.e., educational mission, non-exploitation of students) in *preserving the property* (i.e., the school facilities and grounds) for its *intended use* (i.e., education of children)? This is a very easy test for schools to pass.

It is reasonable to restrict:

- All advertising on campus (Rationale: Schools are non-commercial spaces)
- All food and beverage advertising (Rationale: Prevent confusion with classroom nutrition education)
- All advertising of food and beverages that cannot be sold in the school (Rationale: Ensure consistency with the wellness policy).

It may be unreasonable, and is riskier, to restrict advertising for products that can be sold in schools.

In the viewpoint neutrality test, a court will ask: Does the restriction go to *all* speech by a third party on a particular subject? (speech for and against a subject). It is viewpoint neutral to restrict:

- All advertising on campus (because it affects all advertisers)
- All food and beverage advertising (because it affects all food and beverage advertisers)
- All food and beverage advertising of products that cannot be sold in the school

(because it affects all advertisers who want to promote or oppose certain foods or drinks).

### **Model Policies**

The National Policy & Legal Analysis Network is developing model policies for:

- Negotiating specific terms in vending contracts that limit/prohibit advertising
- Refusing to sign vending contracts that require or permit marketing
- Adopting policies limiting or prohibiting use of school property for:
  - All advertising
  - All food/beverage advertising
  - Advertising of foods and beverages that cannot be sold on campus.

### **Discussion**

*Question:* Has anyone made a takings claim on menus?

*Answer (Ashe):* The only one coming forward is in New York City.

*Question:* Would a state law that required nutritional information be subject to a takings claim?

*Answer (Ashe):* Takings wouldn't be the problem. The risk would be with the labeling.

*Answer (Pomeranz):* The Nutrition Education and Labeling Act regulates claims and nutrition facts labels. There's a concept called preemption. If a federal law is in place and a state or local law conflicts with it, it can be preempted, which means it's illegal for a state or local government to have laws that conflict with federal laws. Menu labeling and listing calories should not be preempted because these are facts, not claims.

*Answer (Ashe):* The restaurant industry is introducing laws all over the country to provide information.

*Question:* There's some benefit to standardization at the federal level. But there are times when that doesn't work. There are some things the federal government can't do that states can; for example, ban guns at schools. What are some interventions at the state level that could be put into place that aren't available at the federal level?

*Answer (Ashe):* States can definitely do school advertising regulations. Legally, that could happen.

*Answer (Mello):* Most of these interventions are primarily state-level interventions. For the federal government to get involved, they have to find a relevant source of jurisdiction; for example, you have to have a wellness policy in order to get free lunch money.

This was the end of the sessions.