Meeting Summary

National Collaborative on Childhood Obesity Research (NCCOR)

Member Meeting

July 12, 2016
8:30 a.m. to 4:00 p.m.

Academy Hall
FHI 360, Washington, DC

Participants: A. Aggarwal, E. Arkin, R. Ballard, C. Brasseux, L. Canady, D. Chester, R. Dickman, L. Esposito, S. Fleischhacker, D. Galuska, S. George, C. Gibbons, J. Guthrie, T. Kauh, L. Kettel-Khan, S. Krebs-Smith, J. Mande, R. McKinnon, A. Oh, T. Phillips, C. Pratt, E. Rahavi, J. Reedy, A. Rodgers, A. Samuels, D. Toombs, N. Vaidya, Y. Valdes, J. Variyam, S. Vorkoper, A. Yaroch, C. Zisman

WELCOME AND INTRODUCTION

E. Arkin welcomed everyone to the meeting, reviewed the agenda for the day, and asked all the participants to introduce themselves. She noted that the meeting packets contained various useful documents, including an update on recent NCCOR accomplishments, a press release about the new *Journal of Physical Activity and Health* supplement on youth energy expenditure data (see below for more on this activity), and an RWJF Health Policy Snapshot on "Declining Childhood Obesity Rates: Where Are We Seeing Signs of Progress?" E. Arkin urged participants to read these materials.

PROJECT UPDATES

Food Service Guidelines

L. Kettel-Khan described this new project as an effort to develop an evaluation framework to examine the impact of guidelines for federal cafeteria and vending foods. This framework could serve as a model for similar programs implemented in state and local government venues, such as parks and recreation facilities, universities, colleges, and schools. The project also aims to use administrative information, procurement invoices, and sales data to assess changes in food offerings attributable to guideline implementation.

Current activities include:

- Drafting an evaluation framework
- Meeting with food service managers and contractors to understand processes and workflow, identify available data and determine the feasibility of collecting these data, and identify issues with implementation of the guidelines
- Developing an agenda for a future workshop to refine the framework and develop a list of needed attendees

Future activities include convening a workshop with food service agency and vendor contractors, management and staff, and research and evaluation scientists. Following the workshop, the workgroup will complete the evaluation framework, develop framework guidance documents, and disseminate the evaluation framework and guidance.

Food Systems

L. Kettel-Khan explained that this workgroup was active some years ago, but decided to suspend its activities because of the many other ongoing NCCOR projects. However, a number of food systems-related projects have been initiated recently and it was decided to resurrect this workgroup. The aim of the workgroup would not be to conduct discrete projects. Rather it would oversee all projects related to food systems issues to increase efficiency and minimize overlap. It also would identify relevant activities in the field and determine how NCCOR can participate in the work.

The group will meet three to four times a year to discuss possible new food systems research areas and projects. One potential activity, for example, is examining how NCCOR can support FoodAPS2. L. Kettel-Khan urged participants to contact her or S. Krebs-Smith if they are interested in participating.

Engaging Health Care Providers and Systems

B. Belay explained that this workgroup is intended to help health care providers, systems, and federal agencies understand how research in childhood obesity prevention can be used in clinical settings. Through its projects, the workgroup aims to support health care providers, systems, public health, and communities in developing linkages by sharing best practices and evaluation strategies. The workgroup is currently completing a white paper summary of its November 2015 workshop on evaluation of clinic–community linkages. The first in a series of webinars highlighting workshop findings and presentations was held on June 22, and attracted a roughly 150 participants who had many excellent comments and questions. A subcommittee of members has begun to discuss how to support workshop recommendations, such as through developing Communities of Practice.

The workgroup plans to hold additional webinars (the next one is scheduled for September 14), update their webpage on the NCCOR website with workshop resources, and develop structures that can continue to support this work.

In the following discussion, R. Ballard reminded participants that this was NCCOR's first activity to engage the clinical community and was undertaken following the recommendation of both the Senior Leadership and the NESP advisory panel. This work also responds to components within the Affordable Care Act that encourage clinical systems to work with surrounding communities as a means to retain their non-profit status. These ACA-related efforts may not be evidence-based, which makes NCCOR's work in this arena all the more relevant.

Health and the Built Environment

R. Ballard noted that the Health and Built Environment workgroup was formed to explore behavioral design as a concept and its application to healthier living and examine how innovation across relevant disciplines, such as art, design, building, and social and cognitive sciences, can contribute to progress in this field. A core group of workgroup members are developing a behavioral design framework and revising a white paper outlining the concept of behavioral design, key principles, gaps, and other considerations.

On March 7–8, the workgroup held a workshop entitled, "Deriving and Applying Behavioral Design Principles to Foster Active Living and Healthy Eating." Workshop participants examined the food and physical activity environment with the goal of identifying behavioral design principles, applying them to active living and healthy eating strategies, and identifying ways to disseminate this knowledge to inform and improve research efforts. Workshop participants came from a wide array of disciplines, from philosophy to design to nutrition and physical activity. Many had not been involved in health-related activities before and all were actively engaged in and enthusiastic about the discussions.

Workgroup members have identified key next steps for both NCCOR and industry. Potential NCCOR next steps fall under three categories:

- Develop conceptual statements/publications/web-based summaries
  - Complete the white paper for web-based distribution
  - Reorient current work on the Behavioral Design Framework to focus on application
  - Develop a workshop series (early 2017) focused on conceptual models in design (e.g., design thinking and evidence-based design)
  - Consider a systems mapping exercise in physical activity
- Gather more information
  - Conduct a survey of programs, resources, tools and future research needs within schools of design, architecture and landscape design
- Create tools and resources for web-based distribution
  - Develop a list of existing tools relevant to behavioral design for healthy living

For the design, architecture, and building industry, a potential next step is to create an Awards and Incentives Program to incentivize interest and involvement in behavioral design activities. NCCOR may provide advice on that effort.

Measures Registry User Guides

J. Reedy explained that this activity is designed to create four User Guides to strengthen the ability of researchers and practitioners to use NCCOR's Measures Registry, a key tool for measures relevant to childhood obesity research. This project is funded through a strategic funding alliance with the JPB Foundation. Dr. Reedy updated members on the current status of each guide:

- Individual Physical Activity (Jim Morrow, Pedro Saint-Maurice, Gregory Welk): Final draft completed
- Physical Activity Environment (Jordan Carlson, Kelsey Dean, Jim Sallis): Final draft in process
- Individual Diet (Sharon Kirkpatrick): Outline in process
- Food Environment (Leslie Lytle, Allison Myers): First draft in process

J. Reedy noted that the Measures Registry continues to generate considerable enthusiasm by evaluators, researchers, and teachers, but it is clear that users are often challenged in the process of selecting measures for specific projects. The User Guides will be extremely useful in helping to guide these users to make full use of the Registry, and the workgroup also will continue to align its efforts with those of RWJF and other groups who are conducting similar types of measurement activities.

Youth Energy Expenditure

K. Watson noted that the aim of the Youth Energy Expenditure (YEE) workgroup is to achieve consensus on methods and measurements to improve energy expenditure estimates for youth. The group has

carried out a number of activities to achieve this goal, including holding an initial workshop in 2012, conducting an analysis of YEE metrics and publishing the results in *PLoS ONE* (McMurray RG, Butte NF, Crouter SE, et al. (2015). Exploring Metrics to Express Energy Expenditure of Physical Activity in Youth, *PLoS ONE* 10(6): e0130869.doi:10.1371/journal.pone.0130869), updating a literature review of published data on YEE, conducting an imputation exercise to fill in gaps in YEE data, and sponsoring a special issue of the *Journal of Physical Activity and Health* entitled "New Data for an Updated Youth Energy Expenditure Compendium." This issue, published on July 11, includes 17 papers with previously unpublished data on YEE.

All of these activities are directed toward the development of an updated compendium of YEE values for physical activities conducted by children and adolescents ages 6 to 18 years. Workgroup members will meet in Washington, DC, August 29–30 to discuss the web design and content of the YEE Compendium, which will be hosted on the NCCOR website. The workgroup also is developing several additional publications and will present a symposium on the work of the YEE effort at the 2017 American College of Sports Medicine conference (and possibly at other conferences also). In concluding, K. Watson noted that workgroup participants have developed a strong collaboration over the time they have worked together on this project. Even though members share similar interests, they likely would not have come together on this issue if it had not been for NCCOR's support of this activity and the workgroup.

In the discussion following, R. Ballard noted that an initial youth compendium was published in 2008 but it had many gaps and many of the data points were based on adult values, so this new compendium is a huge step forward.

Other Updates

- J. Mande reminded participants about the SNAP-Ed Evaluation Framework, which provides 51 metrics and measures that states and researchers can use to evaluate their SNAP-Ed programs. NCCOR developed the Framework with USDA. USDA is hosting a meeting in September with the Centers for Medicare and Medicaid (CMS) Innovations Center prevention team to help them align their evaluation measures with the SNAP-Ed measures. The Framework and companion Interpretive Guide are available on the NCCOR website and the USDA website.
- S. Fleischhacker noted that the NIH Division of Nutrition Research Coordination has compiled a list of NCCOR partner-supported research (grants, research resources) in the areas of food marketing, early childhood education, school nutrition, and retail initiatives and how they might be related to federal food assistance programs. She thanked members for their prompt responses to requests for these materials.
- A. Yaroch reminded participants of the effort described at the previous meeting to evaluate NCCOR's impact. One of the efforts being undertaken is a survey that looks at tools and resources and how NCCOR members and external investigators are using them and what they are using them for (e.g., designing a study, preparing a research paper). She noted that all NCCOR members will receive the survey and urged them to complete and return it. S. Fleischhacker noted that it might be useful for the Measures Registry and Catalogue of Surveillance Systems to suggest that users credit the systems if they use them in studies or papers. J. Reedy agreed, stating that a suggested citation could be added to both websites. She also noted that the Measures Registry and Catalogue of Surveillance Systems track usage and can see how people are linking to these resources from other sites.

- R. Ballard noted that many NCCOR members contributed to the development of the recently released National Nutrition Research Roadmap. This was presented at the Experimental Biology meeting in San Diego in spring 2016. Marian Neuhouser, the incoming president of the American Society of Nutrition, contacted R. Ballard about hosting a series of four to five webinars over the course of the next year to inform the members about the research gaps and opportunities highlighted in the Roadmap. NCCOR members will be contacted about serving as expert presenters on the webinars. NIH's Office of Nutrition Research Coordination, CDC, and USDA will be very involved in developing the webinars. The current thinking is to cluster the issues into topics such as basic science, surveillance, methodologies, behavioral science, and interventions. This activity is not an NCCOR-specific activity, but it is relevant to the work of many members.
- D. Galuska announced that the first meeting of the Physical Activity Guidelines for Americans Advisory Committee would be held July 14–15. The Guidelines are expected to be released in 2018.
- J. Guthrie stated that the behavioral economic-healthy retail BECR Center, a USDA-supported research center at Duke University, just released a brief, "Buying Wisely and Well," that examines the WIC shopping experience and how that can be enhanced to increase the effectiveness and efficiency of the program. The Center also has issued a request for proposals for small grants ($40,000–$50,000) to improve the WIC shopping experience. The deadline for brief proposals is August 12. J. Guthrie also noted that Peter Ubel is the new director of the BECR Center.

FDA'S ROLE IN IMPROVING NUTRITION (Susan Mayne)

J. Mande introduced Dr. Susan Mayne, Director of FDA's Center for Food Safety and Applied Nutrition, noting that he had had the pleasure of working with her previously and reiterating the critical role that the Center plays in ensuring the health of all Americans.

S. Mayne thanked J. Mande and opened her presentation by describing the role that FDA plays in the U.S. food supply. Of every consumer dollar in the United States, 25¢ is spent on FDA-regulated products. FDA regulates the safety and labeling of 80% of all food consumed in the United States. These regulations are designed to ensure that consumers are provided with accurate and useful information in food labeling and to encourage food product reformulation to create healthier products. FDA works in close collaboration with CDC, NIH, USDA, and other federal partners.

Reflecting on the intersection of food safety and nutrition, S. Mayne noted that many of the foods that Americans are encouraged to consume to prevent chronic disease, such as vegetables, fruits, and nuts, are high-risk foods from a food safety point of view. FDA augments its usual inspection and compliance work by conducting innovative regulatory science to prevent outbreaks and solve them earlier.

S. Mayne then provided an overview of FDA's activities in several critical food safety and nutrition issues.

Trans Fats and Coronary Heart Disease

Guided by consistent and strong evidence from controlled feeding trials and prospective studies and the conclusions of seven expert panels, the FDA issued a proposed rule on labeling of *trans* fat in 1999 and a final rule in 2003 (effective 2006). Following the final rule, *trans* fat in the food supply has declined almost 80%. In 2013, FDA issued a Notice of Tentative Determination that partially hydrogenated oils (PHOs, or industrially produced *trans* fats) would no longer be designated as Generally Recognized as

Safe (GRAS). A Notice of Final Determination on GRAS status of PHOs was issued in 2015, with a compliance date of three years (June 18, 2018). Under the Final Rule:

- PHOs are not GRAS for any use in human food and, therefore, are food additives subject to premarket approval under section 409 of the Food, Drug & Cosmetic Act.
- Any interested party may seek food additive approval for one or more specific uses of PHOs with data demonstrating a reasonable certainty of no harm of the proposed use(s).
- FDA defined PHOs to differentiate them from Fully Hydrogenated Oils (FHOs).

The American Public Health Association deemed the removal of *trans* fat from the food supply as one of the Top 10 Health News Stories of 2015.

Food Labeling

FDA has been engaged in revamping the Nutrition Facts label for some time. This rulemaking process has involved two proposed rules issued in March 2014, a supplemental proposed rule issued in July 2015, and two final rules published on May 27, 2016. The final rules cover revision of the Nutrition and Supplement Facts Label and revision of Serving Size Requirements. Most manufacturers must comply with the final rule within two years, except for businesses with less than $10 million in annual revenue, which have three years to come into compliance. The additional year balances the need for consumers to have this information and small businesses' need for additional time to comply.

Key changes are:

- Mandated declaration of added sugars with % Daily Value
- Modernized format to highlight calories and serving size information; updated related footnote
- Updated Daily Value information
- Updated nutrients of public health significance
- Inclusion of *trans* fat and dietary fiber information
- Records requirements
- Changes in some reference amounts used to calculate serving sizes
- Required dual-column labeling with nutrition information listed per serving and per package or unit for certain products
- Changes in the criteria for single serving packages

Now that these Final Rules have been issued, the FDA also plans to update other regulations as needed, such as nutrition content claims (e.g., nutrient content, "healthy," health effects of sodium reduction, health effects of increased calcium intake). Other related rulemaking is ongoing regarding use of the term "natural" and menu and vending machine labeling.

For menu labeling, the Affordable Care Act stipulated that certain chain restaurants and similar retail food establishments disclose certain nutrition information for standard menu items. This covered disclosure of calories in standard items on menus and menu boards and on signs adjacent to self-service food and food on display. These establishments also must provide, upon consumer request, additional written nutrition information, and must post a succinct statement about suggested daily caloric intake. Proposed rules were published in April 2011, and final rules were published December 1, 2014. Final guidance was published May 5, 2016, with a compliance date of May 5, 2017.

The menu labeling rule applies to chains that have 20 or more locations and meet other criteria. Operators who own or operate 20 or more vending machines also must disclose calorie information.

Sodium Intake and Coronary Heart Disease

On June 1, FDA issued draft guidance that provides voluntary, draft sodium reduction targets for the food industry. This approach supports sodium reduction efforts already made by industry, and the targets provide a way to define and measure progress. FDA is taking a gradual approach to reducing current sodium consumption, which is about 3,400 mg/day, by setting both short- and long-term targets. The short-term, two-year targets seek to decrease sodium intake to about 3,000 mg/per day. FDA believes that many food products already have achieved the short-term draft targets. The long-term, 10-year targets seek to reduce sodium intake to 2,300 mg/day and reflect the technical constraints on sodium reduction and reformulation.

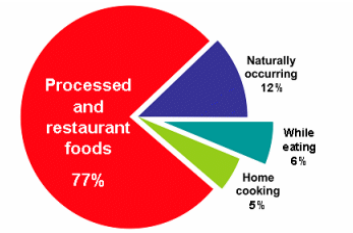
FDA's approach to reducing sodium in the food supply is to set targets for 16 major categories of foods, with about 150 subcategories. Having many categories has the advantage of allowing FDA to be more precise and not take a "one size fits all" approach to various foods. The targets apply to food manufacturers, restaurants, and food service operations. To achieve a significant impact, the targets are weighted to focus on dominant sellers in each category.

Issuing the draft targets is a significant step but the work is not complete. FDA will be actively engaging stakeholders in the months ahead to ensure they understand the agency's methods and have the opportunity for a dialogue before the targets are finalized. S. Mayne encouraged NCCOR members to work closely with FDA on the best path forward to reduce sodium in the food supply.

S. Mayne then reviewed the scientific rationale for focusing on sodium. It is clear that Americans are getting too much sodium in their diets, and the science says that this is a problem. The link between sodium consumption and blood pressure is strong and well documented. High blood pressure is a key risk factor for heart disease and stroke.

It also is clear that is difficult in today's marketplace for consumers not to consume too much sodium. The average intake today is more than 3,400 milligrams—almost 50% more than the 2,300 milligram limit recommended by 2015–2020 *Dietary Guidelines for Americans*, and Healthy People 2020. Reducing sodium consumption has potential for major public health gains and the prevention of hundreds of thousands of premature deaths and illnesses over a decade.

Consumer education about how to reduce sodium consumption is important, and the Nutrition Facts label provides consumers with important information on sodium content of foods. Education and labeling are not enough, however. This approach has been tried for 20 years and it has not worked. That is because most sodium comes from salt added to processed and restaurant foods, not the salt shaker, as shown in the pie chart. This makes it difficult for people to control how much sodium they consume. Some companies have reduced sodium in certain foods, but many foods continue to contribute to high sodium intakes. The voluntary, draft sodium reduction targets are so important because they will give consumers the opportunity to bring their sodium intake down to the recommended amount.



FDA research also indicates that the sodium content of similar foods in the food supply can vary significantly. This suggests that it is possible to reduce the sodium content of foods in the food supply.

S. Mayne then described several other recent FDA food safety and nutrition actions:

- **Folic Acid and Neural Tube Defects.** Mandatory fortification of enriched cereal-grain products was authorized in 1996 and implemented in 1998. Breakfast cereals, corn grits, infant formulas, medical foods, foods for special dietary use, and meal-replacement products are covered under voluntary fortification regulations. A new Final Rule, effective April 15, 2016, has been published permitting the addition of folic acid to corn masa flour at the same levels as in enriched flour. This Rule addresses concerns that women of childbearing age who regularly consume products made from this flour may not receive enough folate to reduce the risk of neural tube defects. Studies have determined with a reasonable level of certainty that this level of fortification poses no harm.
- **Inorganic arsenic in rice.** Inorganic arsenic, a known carcinogen that also is associated with various non-cancer effects, is present in water, soil, and air from natural sources. For that reason, it is present in some foods, notably rice. Rice has the highest levels of inorganic arsenic compared to other foods measured by the FDA. It is of interest because it is an ingredient in many foods and beverages. Several international agencies have set limits on the amounts of inorganic arsenic that is permissible in rice and rice products for infants and young children. FDA has taken a comprehensive approach to this issue, involving sampling foods and analyzing their inorganic arsenic content, conducting risk assessments, developing a risk management approach, and creating risk communication strategies. Analyses show that rice intake is approximately three times greater for infants than adults, and that rice foods for this group contain much larger levels of inorganic arsenic than do other foods. FDA has, therefore, taken action to reduce exposure to inorganic arsenic by proposing an infant rice cereal action level of 100 ppb of inorganic arsenic. In setting this level, FDA considered both public health risk and feasibility. Simultaneously, it created communications messages for the public that advise parents to feed their infant iron-fortified cereals, including oat, barley, and multigrain, as well as rice cereal. For toddlers, parents are advised to provide a well-balanced diet that includes a variety of grains.
- **Foods from genetically engineered (GE) sources.** The Food, Drug & Cosmetic Act requires that food labels bear certain information, including ingredients, allergens, nutrition facts, common or usual name of the food, and any "material" information. "Material" is interpreted as objective characteristics about the food. FDA does not have the legal authority to mandate GE labeling of foods that are not materially different from non-GE. As a class, products derived from GE sources do not differ in any meaningful way from their non-GE counterparts. Numerous GE-related bills are currently being debated in the Congress, and a GE Labeling Bill passed by the Vermont legislature will go into effect July 1, 2016. In 2015, FDA published final guidance for the labeling of foods from GE crops and draft guidance for GE labeling of Atlantic salmon. Recognizing that many food companies are now voluntarily labeling GE foods, FDA is preparing to develop consumer education materials.

S. Mayne closed her presentation by noting that collaborative efforts are already underway among the different agencies on various nutrition and food safety issues, such as collaborations on sodium monitoring with USDA and CDC, and on menu labeling education and outreach. She then listed three areas for potential collaborations that are natural extensions of existing efforts:

- Improving knowledge in the research community about the nutrition-related regulatory process
- Surveillance/monitoring on common topics of interest (e.g., added sugars, sodium, infant and toddler foods)

- Nutrition education research on nutrition labeling (e.g., interpreting Nutrition Facts label information, front-of-pack labeling, calorie information, added sugars) particularly for high-risk sub-populations

Discussion

S. Mayne provided the following responses to questions and comments from participants:

- She agreed that the addition of added sugars to the nutrition label provides an excellent opportunity for potential collaborations across agencies that would focus on adding information to existing nutrient databases. However, this will take time, since companies have two to three years to comply with the new food labeling regulations. In the interim, getting a plan in place for modifying existing databases to accommodate these new added sugars data will be critically important. The label will be critically important because it will provide actual data on amounts of added sugars in the food supply. The other important aspect to follow will be reformulation in food products going forward. Some will not be apparent with the new food label because food companies are already reformulating products to reduce added sugars, but additional reformulation is likely to occur after the new labels appear.
- S. Mayne noted, though, that she did not want to emphasize added sugars above other components of the Nutrition Facts label. Other components, such as dietary fiber and saturated fat, are very important, and messages should not focus only on added sugars at the expense of other nutrients. FDA has worked hard to develop consumer messages and interactive videos on the web.
- Front-of-pack information includes health claims as well as the Facts Up Front information. FDA has been criticized for not also addressing the front of the package, but the Rule governing the back of the package is a 1,000-page document. It is an enormous achievement that had to be done first, before the agency could turn its attention to the front of the package. Various schemes for addressing the front of the package have been proposed and FDA is interested in looking to see where it could potentially have an impact in this arena. Now that the Rule has been published, FDA is taking some time to set priorities for actions going forward.
- Industry has many options for reducing sodium in foods. Consumers do not generally notice the first steps in sodium reduction, and in fact, companies already have been reducing sodium and consumers have not noticed it. Additional reductions are more difficult to achieve, and depend on the role that sodium plays in the food. If it is added primarily for flavor, companies can use alternative strategies to boost flavor. In other foods, sodium is used as a preservative, and significant reductions are harder to achieve. FDA took this into account in setting its targets for the food categories. The food industry has been very inventive in devising ways to reduce sodium, such as creating sodium crystals that are hollow inside. Food technology innovations are ongoing to reduce sodium without affecting taste or safety, and allowing for those to occur is part of the rationale for FDA's 10-year targets. FDA will be monitoring these developments to see what is happening in the food supply.
- As part of menu labeling, consumers can request information on nutrients (such as sodium), in addition to calories, and the restaurants must supply it. This information complements the information on the Nutrient Facts label, and FDA hopes that consumers will become more educated and consumer groups will make the information widely available.

- FDA has actively partnered with many federal agencies and initiatives, including the Million Hearts Campaign, and other groups, such as the American Heart Association, in developing the sodium requirements. The FDA welcomes any and all partnerships around sodium, childhood obesity, added sugars, and other relevant issues. Currently, FDA is heavily engaged with industry groups to ensure the 10-year targets for sodium reduction are both accurate and feasible.
- Ingredient labeling is one of the issues that FDA is considering as it determines its next steps. Many groups have published reports on changes they would like to see, and industry, too, is examining this issue. Industry recognizes that consumers do not like complicated ingredient lists and are increasingly demanding products with five ingredients or fewer. FDA is aware of these trends and of online applications that are extending the information on the Nutrition Facts label (e.g., SmartLabel™).
- By statute, serving size information on the Nutrition Facts label must reflect what consumers are actually consuming. FDA conducted analyses of data from NHANES and other sources to determine where and how the Reference Amounts Customarily Consumed (RACC), which form the basis of the serving size information, needed to be updated. Many people ask why the new serving size reflects actual consumption rather than a recommended amount, and there are two reasons for this. One is that the actual amount is required by law; the other is that it would be very tricky for FDA to "recommend" amounts of items such as sugar-sweetened beverages or candy bars. What science would it use to set those numbers?

LUNCH PANEL: FOOD LABELING AND FOOD SYSTEMS

L. Kettel-Khan introduced the lunch panel presentations, noting that they were an excellent follow-up to S. Mayne's presentation. Dr. Claudine Kavanaugh, Senior Advisor of Nutrition Policy, in FDA's Office of Foods and Veterinary Medicine, spoke first, discussing in greater detail some of the changes in FDA's new Nutrition Facts label regulations. Dr. Roni Neff, Program Director of the Research Program on Food System Sustainability and Public Health Program, at the Johns Hopkins Bloomberg School of Public Health's Center for a Livable Future, discussed the issue of wasted food and childhood obesity.

Updating the Nutrition Facts Label (Claudine Kavanaugh)

C. Kavanaugh opened her presentation by showing the new Nutrition Facts label and pointing to several key changes:

- Much larger font size for calorie information (22 point font versus 8 point font on current label)
- Updated serving size information in larger, bold type (information on current label is based on data from the 1970s; the new label uses recent NHANES data; all of the serving sizes have increased, except for yogurt, because they are based on actual consumption; other considerations were used to devise some serving sizes—for example all serving sizes for canned and frozen vegetables are the same to facilitate product comparison)
- Updated daily values
- The addition of a line for added sugars
- Changes in the micronutrients that must be listed, along with a declaration of actual amounts (vitamins A and C were deleted; vitamin D and potassium were added)
- New footnote that better explains the Daily Value and puts the 2,000 daily calories in perspective; for consistency, this statement is intentionally very similar to the statement on menu labels

C. Kavanaugh then provided additional information about three new aspects of the Nutrition Facts label:

Mandatory Added Sugars Information

The addition of this information was based on substantial evidence that high intake of added sugars decreases intake of nutrient-dense foods and increases overall caloric intake. FDA also based its decision on information from the 2015–2020 *Dietary Guidelines for Americans* that dietary patterns lower in sugar-sweetened foods and beverages are associated with a reduced risk of cardiovascular disease. FDA also added a Daily Value for added sugars because this value, in addition to the number of grams of added sugars, can help consumers understand that staying within calorie limits is difficult when more than 10 percent of total daily calories come from added sugar. Other research-based changes to the sugars information to make it clearer to consumers, included adding "includes" to help clarify that "added sugars" is a component of "total sugars," changing "Sugars" to "Total Sugars" to reinforce the idea that Sugars has distinct components, and removing part of the hairline between "Total Sugars" and "added sugars" to visually reinforce that added sugars are a component of Total Sugars.

C. Kavanaugh also noted that one of the most frequent comments about added sugars labeling was that it was a vague and undefined concept and putting it on the label, therefore, did not have a robust scientific rationale. She noted that FDA has developed the following definition to support the labeling: Added Sugars includes sugars that are either added during processing of foods, or are packaged as such, and includes: syrups, brown sugar, high fructose corn syrup, invert sugar, maltose, trehalose, honey, molasses, sucrose, lactose, maltose sugar, and concentrated fruit juice (i.e., sugars from concentrated fruit or vegetable juices in excess of what would be expected from 100 percent fruit or vegetable juice. Excludes fruit or vegetable juice concentrated from 100 percent fruit juice that is sold to consumers [e.g., frozen concentrated orange juice]).

Single-serving Package Labeling

Another area on the label that FDA changed was the labeling of single-serving packages. FDA's research revealed that serving size information on these commonly consumed amounts, or RACCs, was confusing because the serving size did not match actual consumption (e.g., consumers typically consume an entire 20-oz beverage and think that the calorie information applied to the entire package, when in fact, the product is labeled as having two servings). For RACCs that are two or fewer servings, such as 20-oz beverages, some canned soups, large muffins, and some frozen meals, FDA now requires that the calories and other nutrients must be declared for the entire package rather per serving.

Dual Column Nutrition Labeling

FDA also has made changes to the label for packaged foods that are between two and three times the RACC but that are sometimes consumed in one sitting, such as a 3 oz bag of chips or a pint container of ice cream. Dual column labeling is required for these items, meaning that the nutrition information must be presented per serving and per package. This change is based on research showing that the current labeling is confusing to consumers and they have trouble doing the math to understand the actual calorie and nutrient content of an entire package. Even though dual column labeling adds numbers to the label, FDA research shows that consumers find it helpful. Going forward, C. Kavanaugh noted that it will be interesting to see whether this strategy not only educates consumers but also affects their behavior. She added that it also will be interesting to see how this affects industry decisions.

Discussion

In response to questions from participants, C. Kavanaugh stated that:

- FDA's research has been conducted through web-based panels and, therefore, has been done only in adults. It potentially would be useful to conduct research in younger populations, such as adolescents, but the FDA's research budget is limited so the agency must select carefully. FDA has done some menu labeling research with mothers, who look at children's menus.
- At the moment, the new Nutrition Facts label regulations apply only to labels on packaged foods and they will take some time to be fully implemented, especially the dual column labeling, but FDA plans to look at how these changes will be reflected in online food label apps, such as industry's SmartLabel™ technology.
- FDA does not have authority over the "sell by" or "use by" dates on packages. These dates are added by the food industry. There is considerable confusion about this because consumers assume the dates are driven by quality concerns when they are actually about safety. Congress is considering a bill that would create a national, standardized date labeling system.
- Items on the ingredient list are still listed in order by weight, so multiple added sugars would not be listed together, but by how much weight each one contributes. Canada is proposing to group all the added sugars on the ingredients label but will not list them as a separate element on the nutrient label. Consumers are not very knowledgeable about types of added sugars and do not necessarily understand that multiple sugars on a label might represent a substantial amount of sugars combined. C. Kavanaugh noted that the food industry was not very happy with Canada's decision.
- FDA is planning to monitor changes in most of the food label macronutrients in the food supply, including added sugars, once the new labels are in place, particularly relative changes between sodium and added sugars (if one goes down, will the other go up?). The USDA Branded Foods Database, a public–private partnership of USDA's Agricultural Research Service and many major food industry companies, is currently undergoing beta testing. It will provide nutrition information on many packaged foods and will very helpful in this monitoring effort.
- FDA is looking to USDA's MyPlate as an important collaborator for educating consumers about the new serving sizes.

Food Systems: Wasted Food and Childhood Obesity (Roni Neff)

R. Neff opened her presentation by explaining that the food system—the inputs, mechanisms, and structures for getting food from farm or processing to table and beyond—provides a critical link between childhood obesity and wasted food. The food system chain consists of growing, process, distribution, consumer access, consumption, and waste, but the whole system also includes the policies, the politics, and all the stakeholders that affect each of those steps in the chain, ultimately influencing both childhood obesity and wasted food.

The statistics on wasted food are staggering:

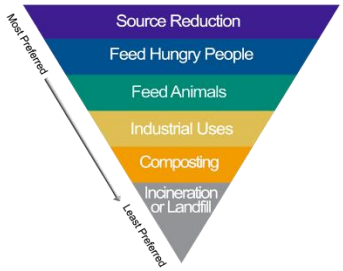
- About 40% of all food harvested in the United States ends up in the landfill (Hall, 2009).
- This represents a cost of $161.6 billion (Buzby, 2014), or $1,500 for an average family of four.
- Wasted food represents 1,249–1,400 calories per person per day (Buzby 2014, Hall 2009).
- 43% of the waste comes from consumers and 40% comes from consumer-facing businesses (ReFED 2016).

- 73% of consumers think waste is less than average (Neff 2015).
- Food waste has increased by 50% since 1970s (Hall 2009). The reasons for this are not fully known, but the increase may have resulted from changes in food safety standards, changes in aesthetic standards so that increasing amounts of food are discarded before reaching consumers, and better tracking.

This last statistic is relevant because the United States has pledged to reduce wasted food by 50% by 2030. A multisectoral group called ReFED has conducted an analysis showing that an $18 billion investment in 27 solutions over 10 years could result in a 20% reduction with $100 billion in societal benefits. R. Neff noted, however, that research in the issue of wasted food is in its infancy and many of the statistics are rough estimates. Additional research is needed to develop effective interventions.

Significant reductions are possible, however. The United Kingdom achieved a 21% reduction in avoidable consumer waste of food over a five-year period through research-driven, comprehensive interventions at the consumer level, as well as education, business changes, and policy changes. Evaluations of the program shows that consumers used their savings to purchase higher quality foods.

Before moving into a discussion of the links between wasted food and childhood obesity, R. Neff reviewed the EPA's Food Recovery Hierarchy, which presents key options for preventing wasted food, from most to least preferred. She also noted that she intentionally uses the terms "wasted food" or "waste of food" rather than "food waste" so that the emphasis is on the food, not the waste.



R. Neff then described some common antecedents for both wasted food and childhood obesity:

- Overproduction and devaluing of food
- Oversized portions
- Parental good intentions, such as providing an abundance, being a "good provider," and providing a sense of security
- The "clean platter" club

This latter may seem like a contradiction in terms, but eating food that is not wanted or needed is a kind of waste. What is needed is not to have the food on the plate in the first place.

Food quality is another arena in which wasted food and obesity intersect:

- The language of fresh fruits and vegetables and images of beautiful produce are emphasized to get people to eat these foods, but it drives a lot of waste. It is possible to shift this frame to note the value and lower costs of frozen produce.
- Aesthetic expectations also drive wasting of food. It is important to emphasize that a food is not necessarily less in nutritional value if it is ugly. Aesthetics drive decisions both at home and in the store. Large volumes of produce are dumped before reaching the store. It means that there is good, healthy food that could contribute to our food supply, and no one will even get to decide whether to eat it.

- Donation quality is another key issue. Food banks should not have to accept any food just because it would otherwise be wasted. A substantial effort is underway to improve the quality of food offered at food banks and this presents a big opportunity because so much food is wasted at the farm level.

A third link between wasted food and childhood obesity can be categorized as "human nature." Both can result from errors, lack of planning, changes in plans, or people buying or preparing too much.

A final link between wasted food and childhood obesity can be categorized as "home ec" skills and knowledge. These skills and knowledge can help in obesity prevention and they also can help in preventing wasted food through improving consumer knowledge about when food is acceptable, using date labels, correctly storing food, and using up food before buying more.

As she mentioned earlier, R. Neff noted that wasted food research is in its infancy, with only 17 papers on the topic published in the past four years. Research gaps include:

- Determinants, reasons
  - How consumers provision, use food
  - Role of culture; excess marketing
- Interventions – pilots, evaluation, experimental
  - Fruits/Vegetables: Aesthetically challenged, frozen, older (demand, economics, framing)
  - Link less waste to healthy eating
  - Home economics
  - Strengthening crop donation
  - Messaging
- Theory (how theory can be used to design and implement interventions)
  - Theory of Planned Behavior, Social Practice, behavioral economics
- Modeling – effects on price, donations, consumption
- Surveillance, baselines

Discussion

In response to comments and questions from participants, R. Neff:

- Agreed with J. Guthrie about the usefulness of a paper by Caitlin Daniel et al., (Daniel C. 2016. Economic Constraints on Taste Formation and the True Cost of Healthy Eating. *Social Science & Medicine 148*:34-41), which explores the issue of offering multiple foods to young children and how that can be an issue for low-income consumers because of concerns about buying food that is rejected by the child. The authors' suggested preparing and offering frozen vegetables because very small portions can be tried, which would reduce the potential for waste.
- Clarified that people of all income levels throw out food that is considered not fresh enough, but agreed that this issue is particularly salient for low-income consumers.
- Agreed that a potential research topic is the wasted food under the Thrifty Food Plan. USDA assumes less waste of food under this plan because of participants' budget constraints, but this assumption has not been shown empirically. R. Neff noted that this topic is politically sensitive, however, and existing research, overall, does not show significant differences in wasted food by

income level. She added that she recently conducted a nationwide consumer survey about date labels and did not see any income differences in use of these labels, though age differences were significant. The National Nutrition Research Roadmap includes understanding date labels as a research opportunity in the sustainability component of the plan.

- It is not known whether wasted food is as much of a problem with urban agriculture as rural agriculture, and this is another good research opportunity. It is known, however, that people are more willing to accept diversity in aesthetics when food comes from a farmers' market than from a supermarket.
- With respect to small portion packages (e.g., 100-calorie packs), the environmental impact of the packaging is often less than the food's impact, so less food may actually be wasted through these types of products than through larger packages.
- There is diversity in how waste is defined (e.g., are the parts of animals that are not typically used or portions of vegetables generally cut off considered to be waste?). Waste is categorized as "avoidable" and "unavoidable," but a gray area exists between the two. An international group has recently published recommendations to more clearly define these two areas.
- More fresh food than frozen food is wasted; USDA has data on wastage across particular categories of foods. Waste in frozen food may be underestimated, however, and better tracking would be helpful.
- Community-level interventions to educate consumers about wasted food have not been evaluated, but anecdotal evidence suggests they seem to raise awareness, mostly through the media around the event, not necessarily the event itself. EPA has a program called Food Too Good To Waste that is doing community-level pilots around the country and it is being evaluated. In addition, Nashville has launched a big community-level intervention that will be extensively evaluated.
- As wasted food initiatives proceed, NCCOR could be helpful because it would be useful to understand how they may affect childhood obesity rates because if both issues are not addressed, some of the efforts may backfire.

ADDITIONAL ANNOUNCEMENTS

- L. Nebeling announced that the FLASHE data set is now available. The website is up and running and will be updated as new data come in. The link to the dataset is included in NCCOR's July e-newsletter.
- R. Ballard provided an update on the July 11 Steering Committee meeting discussions and decisions:
  - The September meeting will focus on physical activity, in part because so many things are going on in that arena and NCCOR has fewer targeted physical activity initiatives. These activities include the first meeting of the Physical Activity Guidelines Advisory Committee July 14-15, the recent Surgeon General's Report on Walking and Walkable Communities, and NCCOR's Youth Energy Expenditure Compendium effort. A portion of the September meeting also will be devoted to NCCOR strategic planning around physical activity.
  - Matt Gilman, a well-known researcher who has done considerable work in the areas of developmental origins of disease and obesity, and more recently expanded into environmental influences on childhood obesity, came to NIH in July to head up the ECHO Study. This is the next iteration of the National Children's Study. This is a tremendous step forward for NIH and is

terrific for NCCOR because much of his work overlaps with that of NCCOR. The Steering Committee is planning to conduct an NCCOR briefing for him at some date in the near future. Given his office's interest in NCCOR's issues, someone from that office is likely to join NCCOR. His office is also sending out recruitment notices and the Steering Committee will distribute them to the membership.

- The Steering Committee is interested in beginning a new round of overall strategic planning early next year (February or March 2017). One activity will be to reexamine NCCOR's priorities to see whether any changes are warranted. All NCCOR members are encouraged to participate in this process.
- A group called Mission Measurement has created a ratings-based process to review all the literature, both published and unpublished, in areas of interventions. Using the results of these reviews and synopses of the literatures, the group creates a web-based system so that groups that have interventions in these areas can enter them into the system and learn how it might be ranked in comparison with other interventions. This system has been used in microfinancing, early childhood education, food access and food security, and several other areas. Recently RWJF has worked with Mission Measurement on a review of what is known about how consumers make decisions about healthy food purchasing. Deborah Young-Hyman in NIH's Office of Behavioral and Social Science has begun discussions with the group about the possibility of a review in the area of methods and measurement related to childhood obesity. Current evidence-based review systems, such as those used by the U.S. Preventive Services Task Force and the Community Guide, eliminate a large percentage of the literature because it is not judged to be of sufficient quality. This group's approach presents an opportunity to learn about another way to understand the literature.
- The NCCOR website has a section on Internal Resources for the use of members, and the Coordinating Center will include a link to these resources in communications with members. http://nccor.org/internalresources

FOOD SYSTEMS & FDA MEETING

Participants: E. Arkin, R. Ballard, S. Fleischhacker, D. Galuska, S. George, J. Guthrie, T. Kauh, C. Kavanaugh, L. Kettel-Khan, S. Krebs-Smith, R. McKinnon, E. Rahavi, J. Reedy, A. Rodgers, A. Samuels, K. Watson, J. Variyam, A. Yaroch

L. Kettel-Khan opened the discussion, reiterating the overall purpose of the small group. The group then discussed the following initiatives of interest.

FoodAPS2

J. Variyam described the several key features of the FoodAPS survey. The survey oversamples low-income households and collects data on:

- SNAP benefit amounts per household
- Distance from grocery store
- Price indices on what they paid as well as what the prices were in other stores in the neighborhood

The second round of the survey—FoodAPS2—will increase the number of households with children and has improved data collection methods. Instead of paper and pencil, data are collected with

Smartphones and iPads. USDA is building a better support system so a description of the food is available at the time of the survey, and data collection occurs in real time (not retrospectively).

L. Kettel-Khan asked J. Variyam how NCCOR might help with FoodAPS2. It was agreed that he should provide cost information to the Steering Committee, specifically information showing what components may be lost depending on the level of funding support.

HealthyPeople 2020
HealthyPeople 2020 is another area in which the Food Systems workgroup expressed interest. NCCOR contacts who work on the project include D. Galuska (CDC) and C. Lynch (NIH). A better understanding of data gaps relevant to NCCOR's work would be helpful.

FDA Nutrition Facts Label
Participants discussed several issues:

- Sodium
    - Need to monitor and track consumption and trends in different categories
    - Track the number of nutrients available in the food system
- Added Sugars
    - Need to track added sugars in the food supply over time
    - Could FoodAPS2 help with this?
- These gaps in data could be opportunities for program announcements for targeted work in these areas:
    - Nutrition
    - Health literacy. A generic funding announcement on health literacy has been released; it could include consumer comprehension of food label information.
    - Several research groups, including CDC's Nutrition and Obesity Policy Research and Evaluation Network (NOPREN), RWJF's Healthy Eating Research, the CDC-funded PRC-SF Food Bank, and the BECR Center, might be interested in pursuing work in this arena.

USDA Branded Foods Database
The group also briefly discussed the Branded Foods Database and what it might cost to include FPED variables in the database.

NCCOR CONNECT & EXPLORE
Participants suggested a number of possible topics for future Connect & Explore webinars:

- Understanding regulatory science system
- Rulemaking 101
- How do we do policy relevant research
- Research questions related to evaluating the Nutrition Facts label
- Research questions and research gaps on wasted food