

Government and School Progress to Promote a Healthful Diet to American Children and Adolescents

A Comprehensive Review of the Available Evidence

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Context: The IOM released an expert committee report in 2005 that assessed the nature, extent, and influence of food and beverage marketing practices on American children's and adolescents' diets and health. The report concluded that prevailing marketing practices did not support a healthful diet and offered recommendations for diverse stakeholders to promote a healthful diet. The investigators evaluated progress for government and schools to achieve the IOM report recommendations over 5 years.

Evidence acquisition: A literature review was conducted of evidence available between December 1, 2005, and January 31, 2011. Evidence selection was guided by the IOM LEAD principles (i.e., *locate*, *evaluate*, and *assemble* evidence to inform *decisions*) and five qualitative research criteria and validated by triangulation. The analysis was conducted between February and June 2011. The investigators categorized 80 data sources into three evidence tables to evaluate public-sector progress (i.e., none, limited, moderate, and extensive).

Evidence synthesis: Schools made moderate progress. Government made limited progress to strengthen the nation's research capacity to understand how marketing influences diets; and no progress either to create a national "healthy eating" social marketing campaign, or to designate a responsible agency to monitor and report on progress for all actions.

Conclusions: Public-sector stakeholders have missed opportunities to promote healthy eating environments for young people. Government could optimally use all policy tools—incentives and disincentives, education, legislation, regulation, and legal actions. Schools could more effectively engage parents, promote national nutrition standards and available guidelines, provide technical assistance, require mandatory reporting of wellness policies, and evaluate collective efforts.

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Context

In December 2005, an expert consensus committee convened by the IOM of the National Academies released a congressionally requested report that assessed the nature, extent, and influence of food and bev-

erage marketing practices on the diets and health of American children and adolescents.¹ The report concluded that food and beverage marketing influences the diets and health of children and adolescents; current marketing practices create an environment that puts young people's health at risk; companies and marketers have underutilized their resources and creativity to market a healthful diet; industry leadership and sustained, multisectoral, and integrated efforts are required; and that current public policy institutions lacked the authority to address emerging marketing practices that influence young people's diets.

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Historical Background

The significance of the IOM food marketing report dates back to the 1970s, when the Federal Trade Commission

(FTC) reviewed the effects of TV advertising on children and initiated a rule-making process to elicit public input to regulate or ban TV advertising targeting young children.² Commercial, consumer advocacy, and interest group views clashed as they sought to influence the rule-making process.³ In 1981, the FTC concluded that TV advertising targeting children aged <8 years was unfair and deceptive because children lack the cognitive skills to distinguish between persuasive intent and factual information viewed.⁴ However, Congress objected to private-sector advertising intrusions, pressured the FTC to withdraw its proposed rule premised on inconclusive evidence, and removed the FTC's authority to regulate advertising to children based on the unfairness doctrine, which is a decision that persists today.^{5,6}

These events have renewed salience because of evidence linking the marketing of high-calorie, nutrient-poor branded food and beverage products to obesity rates. One third of American children and adolescents, aged 2–19 years, are currently overweight or obese.^{7,8} Since the IOM food marketing report release, marketing and media environments have evolved with newer forms of unregulated digital, mobile, and interactive social media to influence young people's preferences, brand loyalty, purchases, diets, and health.

The 2006 IOM food marketing report offered ten recommendations to guide diverse public- and private-sector stakeholders to promote a healthful diet to American children and adolescents. Recommendations 1–5 focused on industry stakeholders, and a separate paper⁹ examines industry progress achieved. The present paper summarizes the available evidence used to evaluate progress made by public-sector stakeholders (i.e., government, educational leaders, and schools) to achieve Recommendations 6–10 over 5 years.

Evidence Acquisition

Table 1 summarizes the methods used to evaluate progress for public-sector stakeholders. The investigators (1) established the evidence-selection approach, criteria, and search strategy; (2) conducted a literature review of electronic databases, federal government agency websites, gray-literature studies and reports, legislative databases, and media stories or news releases that included relevant information that became available between December 1, 2005, and January 31, 2011; (3) selected and categorized 80 data sources ($n=50$ published articles or reports, $n=7$ enacted legislation, and $n=23$ media stories or news releases) into three evidence tables; (4) independently reviewed the evidence for the major IOM recommendations and subrecommendations before assigning an evaluation category (i.e., none, limited, moderate, and extensive) based on six criteria: stakeholder transparency, accountability, cooperation and collaboration within and across sectors with other groups, consistency of actions, establishing and implementing

meaningful goals and benchmarks, and voluntary reporting on progress to promote a healthful diet; and (5) identified opportunities and potential actions that government, educational leaders, and schools could take to promote a healthful diet to young people.

To guide the evidence selection and interpretation, the investigators used the IOM LEAD approach—an obesity prevention decision-making framework to *locate, evaluate, and assemble* evidence to inform *decisions* (LEAD).¹⁰ The analysis was conducted between February and June 30, 2011. The rationale for using the LEAD principles is described in detail elsewhere.⁹

Appendixes A–C (available online at www.ajpm-online.org) provide, respectively, a summary of the study design as well as description and findings for 50 evidence sources; a list of relevant enacted legislation; and a list of 23 media stories and press or news releases, used for the evaluation. Figure 1 summarizes the IOM Recommendations 6–10 for public-sector stakeholders, specific action domains, a progress evaluation category for each recommendation, and potential future actions that decision makers might take to accelerate progress toward the IOM food marketing report recommendations.

Evidence Synthesis

The evaluation showed that extensive progress was not made by any public-sector stakeholder group to achieve the IOM food marketing report recommendations (Figure 1). Moderate progress was made by schools and educational leaders to promote healthy eating environments. Government made limited progress to strengthening the nation's research capacity to understand how evolving marketing practices influence

young people's diets and health; no progress to partner with the private sector to create a long-term, national "healthy eating" social marketing campaign reaching children, parents, and caregivers; and no progress to designate a responsible agency to monitor and report on progress for all actions over the 5-year period reviewed. The results are presented in a narrative summary below.

Parents, Caregivers, and Families—No Progress Achieved

The IOM food marketing report recommended that government partner with the private sector to create a long-term, multifaceted, and financially sustained social marketing program to support parents, caregivers, and families to promote a healthful diet. The report encouraged government to use all integrated marketing communications (IMC) tools and educational and community-based efforts to build skills, especially for parents, caregivers, and young children; and to create a reliable funding stream to support the campaign. Government made no progress to create, adequately fund, and evaluate a "healthy eating" campaign to incentivize and change young people's eating behaviors; produce immediate rewards for children and adolescents to look and feel better; and reduce perceived barriers to cost, time, and inconvenience.^{11–15}

See
Commentary by
Dorfman and
Wootan in
this issue.

Table 1. Methodologic approach used to evaluate government and school progress

I. Investigators used the IOM LEAD principles (i.e., locate, evaluate, and assemble evidence to inform decisions) to establish evidence selection approach, criteria, and search strategy
Five qualitative research criteria (i.e., data relevance, research-design quality, professional judgment, contextual analysis, and credibility by data verification)
Search terms (i.e., <i>child, children, adolescents, nutrition, food policy, food advertising, food marketing, beverage marketing, health, wellness, obesity, overweight, government, public policy, social marketing, media campaign, health education, school wellness policies, school meals, competitive foods, Child Nutrition Programs Reauthorization, Healthy, Hunger-Free Kids Act, research, progress, monitoring, and evaluation</i>)
Data and investigator triangulation to identify and validate evidence convergence
II. LOCATE: Investigators conducted a literature review between December 1, 2005, and January 31, 2011
Electronic databases (i.e., MEDLINE, Science Direct, LexisNexis, Library of Congress, Business Source Premier, and Mergent)
U.S. federal government agency websites (i.e., DHHS, CDC, Department of Education, Federal Communications Commission, Food and Drug Administration, Federal Trade Commission, NIH, U.S. Department of Agriculture, and the Office of the White House Press Secretary)
Studies and reports released by industry, government, nonprofit organizations, foundations, and academic institutions
Legislation database websites
The Library of Congress THOMAS— thomas.loc.gov/
U.S. Government Printing Office— www.gpo.gov/
Robert Wood Johnson Foundation Center to Prevent Childhood Obesity— www.reversechildhoodobesity.org/legislation
National Conference of State Legislators— www.ncsl.org/
Yale Rudd Center for Food Policy & Obesity legislation database— www.yaleruddcenter.org/legislation/
Media stories; press or news releases
III. EVALUATE and ASSEMBLE: Investigators selected and categorized 80 evidence sources (n=50 published articles, or reports, n=7 enacted legislation, and n=23 media stories or press or news releases) into three evidence tables and independently reviewed the evidence for the major recommendation and subrecommendations that contained the following information:
Primary author, year, and reference number
Study design or report description (i.e., government, industry, foundation, nongovernment organization, peer-reviewed journal article, and expert committee report), or media story or press or news release description
Major findings
All of the available evidence was considered before one of four evaluation categories was selected (i.e., none, limited, moderate, and extensive) for stakeholders within a specific sector (e.g., government) or setting (e.g., schools) pertinent to each IOM recommendation, drawing from these criteria:
Stakeholder transparency; accountability; cooperation and collaboration within and across sectors with other groups (e.g., industry, public health, and consumer advocates); consistency of actions; establishing and implementing meaningful goals and benchmarks; and voluntary reporting on progress to promote a healthful diet to children and adolescents
IV. INFORM DECISIONS: Investigators identified opportunities and potential actions that government and school stakeholders could take to advance progress toward the IOM food marketing recommendations
Proposed actions are grounded in the evidence tables, the evolving policy developments for each relevant area, and supported by other expert committee and advisory group reports

Only one evaluation¹⁶ was available during the period reviewed for the Fruits & Veggies More Matters social marketing campaign initiated in 2007. The evaluation found that the campaign raised mothers' awareness and fostered positive behavioral intent to increase fruit and vegetable consumption; however, actual consumption was challenged by cost, different family preferences, and limited restaurant choices.¹⁷ No other evaluations were available for national

programs or campaigns, including the DHHS' We Can!,¹⁸ U R What U Eat¹⁹ and SmallStep Kids²⁰; the Ad Council's Coalition for Healthy Children²¹; Alliance for a Healthier Generation's (AHG's) empowerME²²; Sesame Workshop's Healthy Habits for Life targeting preschoolers, parents, and child care providers^{23,24}; and the U.S. Department of Agriculture's (USDA's) MyPyramid for Pregnancy & Breast-feeding,²⁵ Preschoolers,²⁶ and Kids.²⁷

STAKEHOLDERS	ACTION DOMAINS	PROGRESS *	SUGGESTED ACTIONS
6. PARENTS, CAREGIVERS & FAMILIES 	ALL AREAS <ul style="list-style-type: none"> Use full range of tools, integrating social marketing and education Reach parents of children under four years and other caregivers in child-care, school and after-school settings Establish reliable public-private support for social marketing 	NONE	<ul style="list-style-type: none"> Fund a sustainable, national social marketing and IMC campaign to support healthy eating and active lifestyles and a counteradvertising media campaign to discourage unhealthy eating and sedentary lifestyles Use insights from existing campaigns Support evaluations of all social marketing and IMC and counteradvertising campaigns
7. SCHOOLS & EDUCATIONAL LEADERS 	ALL AREAS <ul style="list-style-type: none"> Develop nutrition standards for competitive foods and beverages sold in schools Relevant stakeholder provide leadership to develop policies and best practices that promote the availability and marketing of healthy foods and beverages 	MODERATE	<ul style="list-style-type: none"> Adopt and promote national nutrition standards that align with the HFFKA 2010 Use available guidelines, tools and technical assistance to create healthy school environments Require mandatory reporting of comprehensive school wellness policies Engage parents to reduce unhealthy school food and beverage marketing Evaluate the 2006 school snack food agreement Support evaluations of collective efforts to promote a healthful diet
8. GOVERNMENT 	ALL AREAS <ul style="list-style-type: none"> Use industry incentives to reward companies that promote healthier products Use all public policy tools to expand availability and accessibility of fruits and vegetables USDA develop and test new strategies to promote healthier meals Congress enact legislation mandating a shift in broadcast and cable TV advertising if voluntary industry efforts are ineffective 	LIMITED	<ul style="list-style-type: none"> Use industry incentives to encourage all sectors and stakeholders to promote a healthful diet Adopt public policy strategies (i.e., taxes, subsidies) to reduce the marketing of unhealthy foods and beverages to young consumers Support USDA's efforts to improve school meals and ensure resources are available Federal IWG complete and release voluntary nutrition standards for marketing to children and adolescents FTC, FCC and FDA work with the CBBB to enforce measures for non-participating and non-compliant companies relevant to industry self-regulatory programs Focus on policies that protect children and adolescents from unhealthy marketing practices
9. RESEARCH CAPACITY 	ALL AREAS <ul style="list-style-type: none"> Expand federal research capacity to identify how marketing influences attitudes and behaviors Develop a means for commercial marketing data to become a publicly accessible resource to inform social marketing 	LIMITED	<ul style="list-style-type: none"> Federal IWG complete and release the Congressionally requested study NCCOR encourage inter-agency collaboration to develop a strategic research agenda on marketing to children and adolescents, especially IMC, "new media" and target marketing of racially and ethnically diverse groups Apply research findings to national social marketing, counteradvertising and IMC campaigns
10. MONITOR & REPORT ON ALL ACTIONS 	ALL AREAS <ul style="list-style-type: none"> HHS Secretary consult with federal agencies to implement monitoring and reporting of recommendations HHS Secretary report to Congress on actions needed to accelerate progress 	NONE	<ul style="list-style-type: none"> Designate and empower a responsible agency to report on progress Institutionalize monitoring of progress in future public health and policy documents

Figure 1. Potential opportunities and actions for government and school stakeholders to promote a healthful diet to American children and adolescents

Note: Based on the 2006 IOM food marketing report Recommendations 6–10 for public-sector stakeholders.

*Evaluation of evidence from December 1, 2005, to January 31, 2011

CARU, Children’s Advertising Review Unit; CBBB, Council of the Better Business Bureaus, Inc.; FCC, Federal Communications Commission; FDA, Food and Drug Administration; FTC, Federal Trade Commission; HFFKA, Healthy, Hunger-Free Kids Act of 2010; IMC, Integrated Marketing Communications; IWG, Federal Interagency Working Group on Marketing to Children (i.e., CDC, FDA, FTC, USDA); NCCOR, National Collaborative on Childhood Obesity Research (i.e., CDC, NIH, Robert Wood Johnson Foundation, and USDA); USDA, U.S. Department of Agriculture

Additional actions were taken by First Lady Michelle Obama's Let's Move!²⁸ initiative that signed an agreement between the Partnership for a Healthier America²⁹ and the Healthy Weight Commitment Foundation (HWCF),³⁰ pledging \$40 million and \$20 million, respectively, to support childhood obesity prevention. In 2010, the HWCF and Discovery Education launched an online energy-balance educational curriculum for teachers and students.³¹ The federal government released *Healthy People 2020*³² that included three social marketing objectives³³ but excluded any reference to promoting a healthful diet to children and adolescents.

Government made no progress to create a public-private mechanism to fund the campaign reaching pre-schoolers, parents, and child care providers. Several educational campaigns use Internet-based platforms to deliver messages but are modestly funded compared with corporate-funded campaigns that apply IMC³⁴—which use all communication channels to deliver messages that predominantly promote unhealthy products to young consumers.⁹ Using even a portion of the \$20 million HWCF pledge to create a “healthy eating” social marketing campaign would be modest compared with the \$1.62 billion spent by industry in 2006,³⁵ which would compete with commercial messages that promote unhealthy food and beverage products.

State and Local Education Leaders and Schools—Moderate Progress Achieved

Educational leaders, school districts, and local schools made moderate progress to create healthier eating environments for students. The IOM report charged stakeholders with developing and implementing nutrition standards for competitive foods and beverages sold or served in schools, and adopting model school wellness policies (SWPs) and practices to expand the availability of foods and beverages to support a healthful diet.

Implementing Nutrition Standards for Competitive Foods and Wellness Policies

Between 2005 and 2010, more states implemented competitive foods guidelines (16 in 2005 vs 28 in 2010) and stricter nutrition standards than USDA (11 in 2005 vs 20 in 2010); limited access to competitive foods (20 in 2005 vs 29 in 2010); and supported farm-to-school programs (one in 2005 vs 23 in 2010).^{36–40} School districts and local schools received technical assistance from the AHG's Healthy Schools Program,^{41–43} Action for Healthy Kids,⁴⁴ and USDA's Team Nutrition⁴⁵ to implement model SWP, reduce competitive foods in schools, and promote healthy school fundraisers.^{46,47}

National educational leaders,^{48–53} AHG,^{54,55} and the American Beverage Association^{56,57} supported policies and actions to expand healthier school foods and beverages. The IOM released two reports^{58,59} to assist federal agencies, states, and school districts to implement quality nutrition standards for school meals and reduce competitive foods. *Healthy People 2020* included separate objectives to increase healthy foods and beverages at schools and to increase the number of states implementing nutrition standards in child care settings.³³

Despite these important efforts, several evaluations found widespread availability of unhealthy competitive foods, especially for older students,⁶⁰ and in-school marketing of high-calorie, nutrient-poor foods used for classroom celebrations and school fundraisers.^{61–66} SWP implementation barriers included competing priorities, limited teacher time, and a perceived need to use food for school fundraising.⁶³ The IOM food marketing report identified many in-school company marketing strategies to reach students.¹ The 2009 Children's Food and Beverage Advertising Initiative (CFBAI) pledges for school advertising⁶⁷ excluded many promotional activities (Table 2) and fails to protect students from all marketing practices promoting unhealthy products.⁶⁸

Federal Child Nutrition Programs Reauthorization

The Healthy, Hunger-Free Kids Act (HHFKA) of 2010 (S. 3307) was passed by the U.S. Senate,⁶⁹ House of Representatives,⁷⁰ and Congress⁷¹ and signed into law in December 2010.⁷² If the HHFKA law is implemented at the planned \$4.5 billion funding level, it will be able to improve SWP, establish nutrition standards for competitive school foods, implement new food safety guidelines, and support partnerships to reduce obesity rates.

Recent evidence suggests that the USDA made some progress to test new strategies to promote healthier meals through the national school meals programs when it was designated to administer the *Chefs Move to Schools* Program in May 2010.⁷³ In January 2011, the USDA released a proposed rule to update the school meals nutrition standards.⁷⁴ Further, the AHG forged agreements with companies to increase the availability of healthy school meals that align with the HHFKA to reach 30 million students annually.⁷⁵

Government: Limited Progress Achieved

Government was charged with using incentives to reward companies to promote healthier foods and beverages; using all policy tools (i.e., subsidies, taxes, legislation, and regulation) to increase fruit and vegetable availability and access; and empowering the USDA to develop and test new strategies to promote healthier meals through the federal school meals programs. The IOM committee rec-

ommended that Congress enact legislation to mandate a shift in broadcast and cable TV advertising if voluntary industry efforts were ineffective to shift high-calorie, nutrient-poor food and beverage advertising on children's TV programs toward healthier products.

The U.S. Congress,^{70,71,76–78} President Obama's administration,^{28,29,72,73,79–81} and federal government agencies^{82–89} all took many positive steps to expand healthy eating and address childhood obesity. However, no evidence demonstrated that government had used performance awards or tax incentives to encourage industry stakeholders to promote a healthful diet, or that Congress had taken steps to enact legislation mandating a shift in TV advertising, despite only incremental industry efforts to substantially shift promotions to healthier products.⁹

Fruit and Vegetable Funding and Promotion

USDA made some progress to expand fruit and vegetable access¹⁷ and implement new strategies to promote healthier school meals described earlier, and other promising actions

to facilitate fruit and vegetable promotion were identified. The Food, Conservation, and Energy Act of 2008⁷⁶ provided a billion dollars in state grants to increase fruit and vegetable availability to school-aged children. The American Recovery and Reinvestment Act of 2009⁹⁰ enabled the DHHS to distribute \$119 million to 50 states and \$372 million to 44 communities in 2010. Communities were free to use funds to increase fresh fruit and vegetable availability to children.^{91,92} The Affordable Care Act of 2010 will promote nutrition labeling of menu items at chain restaurants by 2012.⁷⁸ The Healthy Food Financing Initiative proposed \$400 million to create incentives such as tax credits for food retailers in urban and rural regions to increase the availability of fruits and vegetables.⁴⁰ However, legal ordinances underutilized tools at state and local levels to expand healthy mobile markets and attract farmer's markets to promote fruit and vegetable consumption.⁴⁰

Despite these important steps, the government failed to use all available policy tools to adequately fund initiatives promoting fruits and vegetables according to diet-related

Table 2. School marketing practices covered by and excluded from industry's 2009 CFBAI pledge^{67,68}

Marketing practice	Covered by CFBAI pledge	Excluded from CFBAI pledge
Product sales	No	All food sales
Advertising	Direct advertising	No
Displays and other marketing activities promoting food and beverage sales	No	Vending machine exteriors Menus and menu boards Branded display racks Branded coolers and refrigerator cases
Poster directed at students	Posters or tray liners that feature specific products or brands not tied to or related to items being offered for sale	Posters, signage, and tray liners that feature specific products or brands tied to or related to items being offered for sale
Teaching materials and incentive programs	Branded curricula and other materials with sales messages or embedded branded products	Branded curricula and other materials that identify sponsor or provider of materials Branded food reward programs (e.g., for reading, good grades, good conduct) and adult-directed marketing materials about reward programs
Materials for students and staff	Coupons, food samples, pencils, book covers	Branded materials for staff (e.g., caps, calendars, or aprons)
Fundraising and donations	No	Label redemption programs Formal gift-giving programs In-kind donations of branded foods (e.g., ready-to-eat or packaged products) In-kind donations of branded supplies (e.g., plates or cups) Events held off school campuses (e.g., fundraising nights at restaurants and the in-school promotions for these events)
Other	Public service announcements or advertisements with prominent brand or product depictions	Events after the extended school day (e.g., family nights) Spokes-characters, celebrities, and other public service announcements or advertisements as long as company names or brands are not central

Note: Sources are the Council of the Better Business Bureaus, Inc. Fact Sheet on the Elementary School Advertising Principles⁶⁷ and Food Marketing Report Card: An Analysis of Food and Entertainment Company Policies to Self-Regulate Food and Beverage Marketing to Children.⁶⁸ CFBAI, Children's Food and Beverage Advertising Initiative

health spending vis-à-vis diet-related diseases costs.^{17,93–95} A federal government spending analysis of fruits and vegetables across the USDA, CDC, and NIH from fiscal year (FY) 2000 to FY 2008 found that only 2.8% of the combined budgets were used for fruit- and vegetable-related activities.⁹⁴ To align spending in ways to address diet-related chronic diseases, the USDA would need to double its spending for fruits and vegetables from \$3.4 billion to \$7.0 billion. The NIH and CDC would require an additional \$107.5 million and \$44.7 million, respectively, to address fruit and vegetable research and program gaps.⁹⁴

Congress Legislating to Mandate a Shift in TV Advertising to Healthy Foods

During the period reviewed, several independent evaluations of CFBAI-member company pledges showed only incremental changes in healthier food and beverage products advertised and marketed to children through TV.⁹ A federal Interagency Working Group (IWG) composed of CDC, Food and Drug Administration (FDA), FTC, and USDA representatives released draft nutrition standards for marketing to children and adolescents in December 2009.⁸² In April 2011, the IWG released proposed principles concerning industry food marketing self-regulation for public comment.⁹⁶ No evidence suggested that Congress had empowered the FTC, Federal Communications Commission (FCC), or FDA to regulate misleading or deceptive industry marketing practices promoting high-calorie, nutrient-poor food and beverage products directed to young people. Additionally, Congress had not enacted legislation mandating a shift in the nutritional profiles of products marketed to young people through broadcast and cable TV.

Public and Private Research Capacity—Limited Progress Achieved

The nation's public and private research institutions made limited progress to allocate substantial resources to understand how marketing influences the diets of American children and adolescents. The IOM committee emphasized the need to conduct studies about newer promotional techniques and venues, healthier foods, smaller portion sizes, product availability, and the impact of TV advertising on diet quality and diet-related health.¹ No progress was made, either to develop a means for commercial marketing data to be made available, as a public resource, to understand the dynamics shaping children's and adolescents' attitudes and behaviors under different circumstances; or to inform a national "healthy eating" social marketing campaign targeting parents, caregivers, and young children.

Federal research institutions including DHHS agencies (i.e., NIH, CDC, and FDA), USDA, FTC, and FCC produced important documents during the period re-

viewed. Yet overall, these agencies were inadequately funded to comprehensively research marketing practices influencing young people's diets. Congress had appropriated funds for the FTC to complete two reports^{35,97} on marketing to children and adolescents in 2007 and 2008. Congress also appropriated funds through the FY 2009 Omnibus Appropriations Act to review changes in industry expenditures and marketing activities from 2006 to 2009 and to evaluate the effectiveness of industry's voluntary actions over this period for marketing products to children and adolescents aged ≤ 17 years.^{83,84} The requested study neither met the July 2010 deadline⁹ nor the late 2011 deadline due to intensive industry lobbying against the principles, which prompted legislative language inserted into the Consolidated Appropriations Act of 2012 requiring the IWG to conduct a cost-benefit analysis of its recommendations, even though the nutrition principles are voluntary.⁹

The NIH supported obesity-prevention research in several areas.⁹⁸ In 2010, the NIH released a draft obesity research strategic plan that recommended studying the effects of broadcast and digital media marketing on decision making, energy intake, and physical activity; and testing child- and parent-friendly technologies to support behavior changes.^{99,100} The final NIH research plan was released in March 2011.^{101,102} In early 2011, USDA's National Institute of Food and Agriculture announced the availability of \$8.6 million to support childhood obesity research.^{103,104}

The Robert Wood Johnson Foundation (RWJF)¹⁰⁵ remains the largest funder of food and beverage marketing research on children and adolescents primarily through five national programs and projects: Healthy Eating Research,¹⁰⁶ Rudd Center for Food Policy and Obesity,¹⁰⁷ Bridging the Gap,^{108,109} National Policy & Legal Analysis Network to Prevent Childhood Obesity,¹¹⁰ and the African American Collaborative Obesity Research Network.¹¹¹

In 2009, the National Collaborative on Childhood Obesity Research (NCCOR)¹¹² was formed with NIH, CDC, USDA, and RWJF representatives to prioritize future research and identify best practices for community-based obesity prevention and control. By early 2011, it was unclear what resources NCCOR would allocate to develop a strategic research agenda for food and beverage marketing that could be used to improve young people's diets and health.

Monitor and Report on Progress for All Actions—No Progress Achieved

The IOM committee recommended that the DHHS Secretary consult with other federal agencies and report to Congress within 2 years about the progress achieved and

additional actions needed to accelerate progress. In September 2008, a U.S. Senate hearing was held on food marketing to children.¹¹³ One assessment suggested that no progress was made toward this recommendation.¹¹⁴

Healthy People 2020 was released in December 2010,³³ which included objectives to increase healthy foods and beverages offered outside of school meals and enhance food-retailer incentives to expand access to foods recommended by the Dietary Guidelines for Americans 2010.¹¹⁵ In contrast to objectives included to reduce adolescents' exposure to tobacco promotion through diverse media and retail outlets, *Healthy People 2020* did not include any objectives to reduce young people's exposure to the marketing of unhealthy food and beverage products.³³ By early 2011, the DHHS Secretary had not yet designated a responsible agency with adequate resources to formally monitor and report on progress for all of the IOM food marketing report recommendations.

Discussion

Marketing to children and adolescents involves diverse public and private stakeholders who must collaborate and track their progress despite limited resources and competing priorities. This evaluation found that most progress achieved by public-sector stakeholders occurred between 2009 and early 2011. Neither government nor schools made extensive progress toward any of the IOM report recommendations. However, educational leaders and schools made moderate progress to build healthier eating environments for students, a finding confirmed by the National Conference of State Legislatures.¹¹⁶

Government at all levels is responsible and accountable for integrating the various stakeholders' efforts into actions that will support a healthy population.^{6,117–119} The investigators acknowledge that the federal government took several positive steps through Let's Move! and the Partnership for a Healthier America. In July 2011, several food retailers committed to providing underserved communities with healthy and affordable food through the Fresh Food Financing Initiative.¹²⁰ Government could harness industry leadership and resources more effectively to design, implement and evaluate a national "healthy eating" campaign using IMC to reframe healthy food access as a health equity issue and obesity as a consequence of environmental inequities rather than personal choices.^{121,122}

Resources could also be more strategically invested to target parents of young children. While Let's Move! took encouraging steps in June 2011,¹²³ a separate IOM committee reinforced the need for a social marketing program to promote healthy eating behaviors to young children.¹²⁴ A national campaign could use research

findings from NCCOR and RWJF grantees^{106–111}; focus on youth and digital, mobile, and interactive social media¹²⁵; USDA's ChooseMyPlate.gov¹²⁶ and 5-4-3-2-1-Go!¹²⁷; and support counteradvertising campaigns to change unhealthy eating behaviors^{122,128} such as sugar-sweetened beverage consumption.^{129–131}

The IOM food marketing report concluded that public policy institutions lacked the authority to address emerging marketing practices influencing young people's diets. Federal, state, and local government could apply many underutilized legislative, regulatory, and legal tools to act within their existing authority to promote healthy eating environments.^{118,119,132–134} Government could also facilitate consumer price subsidies and producer cost subsidies,^{93,94,135} as well as taxes^{136–138} to make healthy foods less expensive than unhealthy foods. The federal IWG agencies could also urge all relevant companies to adopt the voluntary nutrition principles,⁹⁶ carefully review public comments received, and issue a final report advising the government on comprehensive steps to protect children and adolescents from inherently misleading and deceptive food advertising and marketing practices promoting unhealthy food choices.

Several developments threaten the government and school progress achieved. First, industry has questioned the legality and implementation feasibility of the voluntary IWG principles, asserting that the guidelines restrict their free speech rights and potentially have antitrust implications.^{139,140} Legal experts have assured that the voluntary IWG principles do not raise concerns because U.S. government speech is exempt from First Amendment scrutiny and represents a routine function to issue voluntary health-promoting guidelines. Additionally, the IWG principles are unlikely to raise anti-trust issues because they will not cause unreasonable anti-competitive effects and may even produce pro-competitive benefits.¹⁴¹ Legal questions have also been raised concerning the implementation of the principles under existing federal nutrition monitoring law.

Second, the federal research structure and schools' capacity to promote national nutrition standards aligned with the HHFKA will be hindered if Congress reneges on the \$4.5 billion financial commitment to fully fund USDA obesity research and school nutrition standards through the HHFKA Act^{142,143} reflected in the FY 2010 Agriculture Appropriations Bill (H.R. 2112) passed in June 2011.¹⁴⁴ In November 2011, Congress blocked USDA from using funds to implement a proposed rule to improve the quality of the national school lunch program.¹⁴⁵

Moreover, FDA's proposed regulations to implement the federal menu-labeling law by 2012 through mandatory nutrition information disclosures could be strengthened by overruling the exemptions secured by candy companies and movie theaters.¹⁴⁶ Congress could em-

power the FDA to cover all food and beverage products marketed to young people through the menu-labeling law. Additionally, the FDA could support state and local initiatives to enact identical restaurant and vending machine labeling requirements.¹⁴⁷

The FTC has authority, through rule making and by enforcing federal laws, to regulate deceptive and misleading advertising⁶ in all media including TV, radio, print, websites, and mobile phones. Under FTC's current policy, deceptive marketing is "a practice that is likely to mislead a consumer acting reasonably under the circumstances in a material way."¹⁴⁸ The FTC could exert its authority to reduce misleading and deceptive marketing of unhealthy food and beverage products targeting young people.^{6,148}

Congress could also empower the FCC to develop new rules for advertising and commercial promotion during children's programming, as recommended by the White House Task Force on Childhood Obesity.⁸⁰ If industry's voluntary efforts continue to show unabated unhealthy food and beverage marketing, as suggested by a recent evaluation,¹⁴⁹ the FCC could pursue measures that support the public's interests by limiting interactive marketing of unhealthy products on digital TV, prohibiting embedded advertising in prime-time programs with a substantial child audience, modifying the Children's Television Act to reduce the minutes per hour of advertising allowed in children's TV programs, and revising the definition of a program-length commercial.¹⁵⁰

A critical opportunity was missed to institutionalize the monitoring of progress to reduce unhealthy food and beverage marketing practices through *Healthy People 2020*.³³ The federal government could designate a responsible agency to evaluate and report on future actions. This evaluation found that the prevailing marketing environment continues to threaten children's health and miss opportunities to promote a healthful diet and create healthy eating environments. Figure 1 summarizes potential actions that government, educational leaders, and schools could take to accelerate progress, drawing from the evidence reviewed and supported by other expert advisory groups.^{33,35,41,49,58,59,80,96,101,117,126,151–153}

A strength of this evaluation is the integration of a range of evidence sources across a broad array of action domains concerning marketing to children and adolescents to inform future policies. Study limitations include potential inter-investigator bias and variation in the qualitative judgment when applying the specific criteria (i.e., transparency, accountability, cooperation and collaboration with other stakeholders within and across sectors and settings, establishing meaningful goals and benchmarks, and voluntary reporting of actions) to determine the progress categories. Future evaluations should opera-

tionalize and systematically apply clear definitions for each assessment criterion and rationale for determining the progress categories. Additionally, a mixed-methods research approach that combines stakeholder interviews with other forms of available evidence is needed to inform policies and actions that support healthy food and eating environments for young people.

Conclusion

The 2006 IOM food marketing report provides a coherent framework to ensure a nexus of coordinated actions is implemented by diverse stakeholders to promote a healthful diet and healthy eating environments for young people. The IOM LEAD approach was used to evaluate progress made by government, educational leaders, and schools to achieve the report recommendations. Government could use all policy tools, including incentives and disincentives, education, legislation, regulation, and legal actions. Schools could effectively engage parents; adopt national nutrition standards and available guidelines, tools, and technical assistance; require mandatory reporting of comprehensive wellness policies; and support evaluations of collective efforts.

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Appendix

Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.amepre.2011.10.025.