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# Childhood Obesity on the Front Lines

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In the United States, the significant morbidity and mortality burden due to rising obesity rates is well known,<sup>1</sup> and the financial toll is substantial. Among adults, obesity-attributable direct health care costs in 2000 were estimated at over \$75 billion,<sup>2</sup> which is likely only half the actual costs once lost work productivity is counted.<sup>3</sup>

Early childhood and youth are clearly strategic life stages for primary prevention and for forming long-term behaviors needed to change this picture. Obesity begins early: In New York City by age 2 years, nearly half of children are overweight or obese, while only half of daycare and elementary school children are at a healthy weight.<sup>4</sup> The rising incidence of type 2 diabetes in children and youth,<sup>5</sup> and the expectation that—if unchecked—rising obesity rates will lower by decades the age of onset for many chronic diseases, highlight the urgency of reversing this epidemic. Fortunately, societies are often more willing to change deeply held values and practices when the health of children is at stake.<sup>6</sup>

To reverse the obesity epidemic we need a much better understanding of its basic causes and of the effectiveness of interventions to prevent and treat it. Three types of information are urgently needed: (1) high-quality descriptive and analytic studies of our food and physical activity environments and their influence on obesity, (2) well-designed studies to document the impact of intervention strategies and policies to address environmental characteristics and risk factors, and (3) a practical monitoring system that provides timely, valid information about “upstream” measures such as changes in the environmental, community, and organizational conditions that drive poor diet and physical inactivity.

Bridging the Gap takes on the first and third of these pressing questions. This supplement to the *American Journal of Preventive Medicine* looks at the Monitoring the Future (MTF) and Youth, Education, and Society (YES)

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studies beyond their original focus on tobacco, alcohol, and substance abuse. These new analyses of a large, representative national profile of physical activity and nutrition characteristics in schools and their communities constitute an important step toward answering the first type of information—descriptive and analytic studies—for school-aged children and teens. Work such as that by Powell and colleagues,<sup>7</sup> which documents the relationship between access to a supermarket and adolescent body mass index (BMI), strengthens the arguments for government to expand access to supermarkets in underserved communities, a policy already in use in Philadelphia, under study in New York City, and proposed in California. Simply documenting, as Johnston and colleagues<sup>8</sup> do, that in the midst of an obesity epidemic, 88% of our high schools are plying their students with concentrated sugar syrups, and less than one third of high school students report physical education or participation in sport, is itself a clarion call to policy action by local and state governments. Since these findings pre-date the federal mandate for school wellness policies that became effective in 2006, they provide a baseline against which to set national goals and measure success. Papers by Mâsse et al.<sup>9,10</sup> from the National Cancer Institute deepen our understanding of challenges facing the development of measurement systems for school nutrition and physical activity policies and practices.

Powell's group demonstrates how commercial databases and geocoding can be used to expose complex relationships between public health and the physical and marketplace environments.<sup>11</sup> Importantly, this set of papers reinforces the need to address disparities associated with socioeconomic status and race/ethnicity. Together, these studies provide invaluable guidance in the design of effective obesity prevention programs at both the community and state levels.

Of course, better understanding of the obesity problem is just a first step. Three reports from the Institute of Medicine (IOM) recently elucidated the scope, complexity, and interrelationships among factors that contribute to the childhood obesity epidemic.<sup>12–14</sup> The reports highlighted the especially urgent need for action on behalf of low-income and children of color. Conclusions were that the only successful approach would be a comprehensive one that involved virtually every stakeholder group at the national, state, and local levels—government, businesses of all types, and com-

munity groups serving children—along with healthcare providers and parents. In particular, they called for the President, governors, and local elected officials to assign their official health agencies with responsibility for establishing a focal point, providing visible leadership, and assuring that strong programs are delivered.<sup>12,14</sup>

Marketing practices of the food and beverage industries have been singled out as contributing to the epidemic.<sup>13</sup> Similar to the tobacco-control movement, obesity prevention will require changes in exposure to unhealthy influences, marketing practices, and price incentives that modify the commercial conditions in which obesity flourishes. Unlike tobacco, addressing obesity also offers significant opportunities for voluntary redirection, for shifting to the promotion of healthier foods and physical activity products, and for establishing public/private partnerships to improve the food and activity environments.<sup>15</sup>

The building blocks of this sea change are expected to include community programs, mass communications and public education, and environmental and policy approaches. These efforts must be woven into a balanced, integrated approach that creates new social norms. The California Obesity Prevention Plan is one example of a multi-pronged public health strategy that, in turn, provides a prevention cornerstone within the larger framework of health care reform.<sup>16</sup> For obesity prevention, the goal is to create environments where healthy choices are easy choices and unhealthy choices are made more difficult, while eliminating social and economic disparities. Significant investments of political will and resources will be required.

For those of us on the front line, a host of questions remains. What are the most effective actions we can take? What are the feasible ones? Should health officials support supermarket expansion or zoning controls of fast-food restaurants and convenience stores near schools? How can we make unhealthy foods relatively more expensive, and fruits and vegetables less expensive? Are restrictions on food advertising to children feasible, and how? Should we create new physical activity programs? Build bike paths? What are the most critical changes needed in schools, and how can we in public health promote new school policies and practices? Since public health funding is generally inversely proportional to the burden of disease, and funds for obesity prevention remain quite limited, what can be achieved with current resources? And how will we gauge our progress?

Decisions about funding priorities ideally would be informed by carefully evaluated, data-driven approaches. But in the emerging, complex, and interdependent field of large-scale obesity prevention, evidence as to the best combination of interventions is only starting to emerge. Community-based best practices for physical activity have been provided by the Community Guide.<sup>17</sup> Similar guidance for nutrition

policies and the food environment is desperately needed.

On the community intervention side, such evidence is percolating to the surface. While comprehensive approaches such as the recently published multi-level trial in Somerville, Massachusetts<sup>18</sup> hold great promise, much remains to be learned about the optimum mix of interventions. Indeed, many health departments have completed plans<sup>19</sup> and some inventories for state and local obesity prevention policies exist.<sup>20,21</sup> For example, in addition to its effort to promote calorie labeling in restaurants and physical activity in childhood settings, New York City has created a Food Policy Task Force to address access to healthy foods, public food procurement, and food security issues. Rigorous new rules promoting physical activity and better nutrition in day care and restricting television viewing in those settings also went into effect in 2007.

Governors and foundations are stepping up.<sup>22–24</sup> As required by Congress, the Federal Trade Commission will resume its oversight of children's advertising and report on food industry marketing practices to children.<sup>25</sup> A new consensus "blueprint" created by leading practitioners names science and research as cornerstones of the public health response, along with access, collaboration, workforce, and communications.<sup>26</sup>

For health departments the situation is urgent. We must construct our response to the obesity epidemic now, amidst a dearth of definitive best practices. Increasing children's physical activity significantly and improving their access to and consumption of healthy foods clearly are the twin pillars for obesity prevention. In and of themselves, these measures are also fundamental to improving public health. While it would be ideal to know more, studies such as those assembled herein enable us as practitioners to navigate our way safely. As we implement new policies and programs to address these issues using the best available evidence, the obligation to evaluate and learn from our triumphs and failures is clear.

This supplement presents evidence of a scope and scale that is unprecedented. Its breadth reveals that there are more similarities than differences in the conditions that must be addressed across our diverse country. It identifies what many front-line obesity prevention practitioners might view as the biggest public health challenges. And while today's monitoring systems for health outcomes such as health behavior and body weight must be strengthened, the suite of studies provides evidence and suggests the contours of a new toolbox to address population-based, "upstream" drivers of the obesity epidemic.

To reverse the epidemic, the country's nearly 3000 local and state health departments must be able to identify the most significant modifiable contributors, lead the collective efforts of stakeholders, intervene vigorously, evaluate responsibly, and advocate proac-

tively. These papers provide a timely foundation to help all prevention practitioners meet this challenge.

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