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# **The Increasing Weight of Regulation: Countries Combat the Global Obesity Epidemic**

Allyn L. Taylor, Emily Whelan Parento and Laura A. Schmidt

## **Précis**

Obesity is a global epidemic, exacting an enormous human and economic toll. In the absence of a comprehensive global governance strategy, states have increasingly employed a wide array of legal strategies targeting the drivers of obesity. This article identifies recent global trends in obesity-related legislation and makes the normative case for an updated global governance strategy.

National governments have responded to the epidemic both by strengthening traditional interventions and by developing novel legislative strategies. This response consists of nine important trends: (1) strengthened and tailored tax measures; (2) broader use of counter-advertising and health campaigns; (3) expanded food labeling; (4) increased attention to the built environment; (5) expansion of bundled school-based strategies; (6) greater restrictions on advertising and marketing to children; (7) strengthened restrictions, standards, and bans on specific foods and food additives; (8) more targeted screening and brief interventions; and, (9) creative use of integrated programs to promote sustainable agriculture, environment and healthy food.

There remains a need to create a centralized, publicly accessible database of interventions. In addition, the scale of the obesity epidemic combined with the global trend toward more comprehensive regulation may for the first time create political space and will for an international obesity strategy.

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## Article

It is widely recognized that the world is now in the midst of a globalized obesity epidemic. Where obesity was once considered a public health concern confined to high-income countries, over the past quarter-century overweight and obesity has spread rapidly to low and middle-income countries. With the exception of those in sub-Saharan Africa, every country in the world faces worrying obesity rates. Over the past two decades, global obesity has risen 82% and certain regions, such as the Middle East and North Africa, have seen even higher rates.<sup>1</sup> The massive growth in obesity is having an enormously significant impact on global health trends, placing people around the world at greater risk of a range of health problems, especially non-communicable diseases (NCDs).

In the past, global health resources and attention have been largely directed toward controlling the spread of infectious disease, particularly in developing societies. However, this paradigm is beginning to shift with the awareness that NCDs, including heart disease, diabetes, cancer and other chronic ailments, now account for a greater health burden in developing countries than infectious diseases.<sup>2</sup> This epidemiological transition has highlighted risk factors such as unhealthy diet, tobacco and alcohol consumption as significant contributors to the global burden of disease and has led policymakers to understand unhealthy diet as a causal agent in the global burden of disease.<sup>3</sup> In response to this paradigm shift, in 2011, Member States of the United Nations convened a high-level meeting of the General Assembly to consider strategies for the prevention and control of non-communicable diseases worldwide and adopted a high-level political declaration calling for strengthened national and international action.

Though many countries have adopted various strategies, including legal tools, to counter the rising obesity epidemic, much can be done to strengthen and harmonize these national and global efforts. Critically, there is a need for more research regarding existing national strategies targeting obesity, including the changes in these strategies both over time and in dimension. Efforts toward use of best practices and coordination of strategies are currently hindered by the yawning gap in comprehensive research and analysis of existing national responses directed toward the drivers of obesity.

This article takes a first step to fill the existing research void by identifying recent trends in obesity-related legislation that has been adopted and implemented in countries worldwide. As this article illustrates, in the last decade there has been a significant change in the policy environment, with more countries, including both high and low-income states, implementing legal strategies to address the drivers of obesity. These legal strategies include the deepening of existing legislation and widening of the scope of regulatory interventions. Overall, the emerging tide of new and varied legal interventions to combat the obesity epidemic from countries at all income levels, across the globe, is unprecedented.

Part I of this Article provides an overview of the global obesity epidemic, including existing scientific research documenting the contributing factors of obesity. Part II describes traditional regulatory approaches to address the drivers of obesity, with a particular focus on voluntary mechanisms. Part III sets forth emerging trends in national obesity legislation worldwide, including strengthened traditional initiatives and novel regulatory strategies. This

section describes nine core regulatory focal areas, including: taxation; public education; labeling; school-based interventions; the built environment and access; marketing and advertising restrictions; controls and bans on products; screening and other individual interventions, and; integrated programs to support environment, sustainable agriculture and healthy food. Finally, Part IV discusses how, in view of the observed emerging global trend for strengthened and deepened obesity legislation in countries around the world, there may for the first time be political space for a much-needed global legal strategy to address some of the drivers of obesity.

## I. THE GLOBAL OBESITY EPIDEMIC

Overweight and obesity has rapidly emerged as a global epidemic and poses a serious global health challenge. Over 155 million children – one out of every ten – is overweight.<sup>4</sup> In the U.S., for example, childhood obesity has tripled over the last three decades.<sup>5</sup> On any given day, a full one-third of adults in the U.S. will eat fast food and 7 percent of Americans report eating McDonalds every day.<sup>6</sup> Given the considerable body of research linking fast food intake and risk of obesity and diabetes,<sup>7</sup> the levels of fast food consumption are cause for alarm. Similarly, consumption of sugar-sweetened beverages (SSBs) is a known risk factor for obesity, diabetes, and heart disease,<sup>8</sup> which creates a need for policies to discourage excessive consumption of these products given that half of Americans consume some type of SSB daily and 25 percent consume at least 200 calories daily from SSBs.<sup>9</sup> While the U.S. and other industrialized countries comprise most of the countries with the highest obesity rates, the epidemic is rapidly spreading to low and middle-income countries. Hyperpalatable foods – that is, processed, sugar and salt-laden foods characteristic of the “American diet” – are now exported throughout low and middle-income societies worldwide, and obesity rates have risen rapidly in countries in all regions.

The scientific link between obesity and consumption of unhealthy foods is well-established. Unhealthy foods, sometimes referred to as “hyperpalatable” and “obesogenic” foods, include packaged foods and beverages typical of the modern “Western diet”—foods that have high sugar, sodium and fat, leading to high energy and low nutritional density. Particularly when consumed in the absence of regular physical activity and a diet rich in high-fiber fruits and vegetables, these foods lead to obesity and a cluster of interrelated risk factors—called “metabolic syndrome”—that increase risk for heart disease, stroke, diabetes and many cancers.<sup>10</sup> Worryingly, these unhealthy foods may even have addictive qualities – biological studies on animals and humans demonstrate that, like alcohol and tobacco, hyperpalatable foods have similar effects on neurological reward pathways in the brain that reinforce increased consumption.<sup>11</sup> Neuroimaging studies of humans suggest that similar brain circuitry is activated during alcohol, tobacco and sugar craving, providing evidence of tolerance and withdrawal as well.<sup>12</sup>

Although obesity at any stage of life is a risk factor for a host of health problems, childhood overweight and obesity is particularly detrimental to lifetime health, as it is linked not only to a number of physical and psychological illnesses during childhood but also to obesity in adulthood – with excess adiposity identified as a major risk factor for diabetes, hypertension, cardiovascular disease, and certain forms of cancer.<sup>13</sup> The problem is not confined to wealthy countries – of the 42 million children under the age of five currently estimated by the World

Health Organization (WHO) to be overweight, approximately 35 million reside in developing countries.<sup>14</sup> High rates of childhood obesity are prevalent in communities in the South Pacific, Latin America, and China.<sup>15</sup> Even in India, long the poster child for under-nutrition, obesity rates among school going children in urban areas have reached as high as 20%.<sup>16</sup> The combination of the unhealthfulness of these hyperpalatable foods and growing awareness of obesity's role in chronic disease has galvanized domestic and international support for the expansion of obesity prevention efforts, particularly those targeting childhood obesity.<sup>17</sup>

## II. PRIOR OBESITY REGULATION: CHARACTERIZED BY INEFFECTIVE, VOLUNTARY MEASURES

Both comprehensive and targeted regulatory interventions for obesity are a fairly new global phenomenon. Historically, efforts to combat obesity have been characterized by industry-led measures designed within a “personal responsibility” framework, which considered the primary drivers of obesity to be poor diet and lifestyle choices by individuals. In this paradigm, interventions were primarily directed either at educating consumers on the relative healthfulness of diet and lifestyle choices or in some instances, protecting children from excessive advertising of unhealthy foods under the theory that they were too young to take personal responsibility for their diet and lifestyle choices.<sup>18</sup>

To date, in most countries with strategies to restrict marketing of unhealthy food and beverages, voluntary industry self-regulation remains the dominant response. In recognition of the obesity epidemic, some food and beverage corporations launched voluntary pledges to reduce the extent and impact of commercially produced, energy-dense food and beverages to children. These pledges may be specific to certain regions or countries, and they do not seem dependent on the urgency of public health need for obesity prevention measures – for example, food manufacturers have adopted voluntary pledges in some countries (primarily European) while doing nothing in other countries with similarly alarming obesity statistics.

The most widely publicized of these pledges is the initiative launched by the International Food and Beverage Alliance (IFBA). The IFBA was “established in May 2008 to explicitly answer the WHO call to action [in its Global Strategy on Diet, Physical Activity and Health] by formulating a set of five global public commitments.”<sup>19</sup> These non-binding commitments set goals in five categories:

1. Continue to reformulate products and develop new products that support the goals of improving diets;
2. Provide clear and fact-based nutrition information to all consumers;
3. Extend our initiatives on responsible advertising and marketing to children globally;
4. Raise awareness on balanced diets and increased levels of physical activity; and
5. Seek and promote public-private partnerships that support the WHO *Global Strategy* [on Diet, Physical Activity and Health].<sup>20</sup>

The IFBA claims these commitments are a demonstration of industry willingness to partner with public health advocates to improve the dietary profile of consumers. However, the commitments are non-binding and generally vague, making external monitoring of progress difficult to impossible.<sup>21</sup> As an example, the IFBA recently announced its “Global Policy on Advertising and Marketing Communications to Children,” which was billed as a “strengthened”

version of the IFBA's 2008 commitment on the subject. Despite this, the new commitment is demonstrably weak. Under the new policy, IFBA members commit either to:

1. [O]nly advertise certain products that meet specific nutrition criteria based on accepted scientific evidence and/or applicable national and international dietary guidelines [since food company portfolios vary widely, each company determines its own nutritional criteria and makes these public] to children under 12 years; or
2. [N]ot to advertise their products at all to children under the age of 12 years.<sup>22</sup>

These and other voluntary standards are, in large part, industry developed, implemented, and monitored. Among the regulatory options, self-regulation is unquestionably the food industry's preferred approach, as there are very few documented instances in which industry has urged adoption of regulatory measures that limit its ability to market and sell food products.<sup>23</sup> Voluntary self-regulation eliminates pressure and the potential for negative publicity that could result from violations documented via external monitoring, as well as threats of financial penalties for failure to adhere to the standards. At the same time, self-regulation gives industry a plausible basis upon which to claim that it is engaging in action to protect public health. In addition, industry can use the existence of voluntary self-regulation schemes to forestall the imposition of stricter regulatory measures.<sup>24</sup>

Given the factors described above, it is unsurprising that self-regulatory initiatives have proven insufficient to stem the childhood obesity epidemic, even in high-income countries where resources and political will exist to monitor industry actions. Their limited record of success is attributable to the fact that industry pledges are often restricted to young children (under the age of 12 or 14), as is the case in the European Union, the United States, Canada, and Australia.<sup>25</sup> Moreover, typically the pledges are far from comprehensive in scope. They are usually confined to traditional advertising mediums, such as print, Internet and television media, leaving others untouched, such as sports event endorsements and product placements in film.<sup>26</sup> Where nutritional standards for products have been subject to voluntary bans, the standards are typically industry-defined and arguably watered down from those promulgated by government and expert panels. Finally, at the end of the day, because industry members may opt in to the pledges, they are far from comprehensive in scope.<sup>27</sup>

Thus, even under the best of circumstances in high-income societies, there are many challenges inherent in creating an effective public health instrument whose design and implementation is industry-led. All the more burdensome are the challenges of incentivizing industry to apply and abide by voluntary pledges in low-income countries. Industry-led pledges effective in European and other high-income countries are seldom applied to those in Africa and Southeast Asia, and other less developed regions of the world.<sup>28</sup> Moreover, monitoring and enforcement challenges abound, particularly in low and middle-income countries. Without resources or political will to supervise industry conduct, there is little incentive for industry to adhere even to the modest standards it creates. However, industry advocates respond to this criticism by saying that "[t]he value of self-regulation is especially great in countries with weak to absent government regulatory capacity"<sup>29</sup> – essentially, self-regulation is better than no regulation.

Still, even with their documented shortcomings, it is important to note that voluntary pledges are not necessarily inherently ineffective. If they are well-designed and undertaken in

genuine partnership with public health stakeholders, non-binding agreements could potentially be valuable tools in support of public health. At the global level, scholars have, for example, supported the development of voluntary intergovernmental code of practice that could be implemented into national law and policy.<sup>30</sup> However, industry has often resisted efforts to work in partnership with public health officials and stakeholders to develop strong voluntary codes or pledges, preferring to work entirely without outside scrutiny, and the resulting pledges have been predictably weak.<sup>31</sup> In recognition of this problem, some scholars have gone so far as to analogize the food industry to the tobacco industry, observing that “[t]here are striking similarities,” between food and tobacco industry responses to calls for regulatory responses to the tobacco and obesity epidemics.<sup>32</sup> Brownell and Warner identified key tactics the industry uses to resist any perceived infringement on its ability to sell its products:

- Focus on personal responsibility as the cause of the nation’s unhealthy diet.
- Raise fears that government action usurps personal freedom.
- Vilify critics with totalitarian language, characterizing them as the food police, leaders of a nanny state, and even “food fascists,” and accuse them of desiring to strip people of their civil liberties.
- Criticize studies that hurt industry as “junk science.”
- Emphasize physical activity over diet.
- State there are no good or bad foods; hence no food or food type (soft drinks, fast foods, etc.) should be targeted for change.
- Plant doubt when concerns are raised about the industry.<sup>33</sup>

These tactics are employed on a regular basis, even in response to proposed non-binding codes developed by public health stakeholders. For example, in 2011 the Obama administration issued a proposal for food manufacturers to voluntarily adopt restrictions on the marketing of certain of their products (sugary cereals, salty snacks and other unhealthy products) to children. In response, food industry representatives adamantly insisted to regulators that the proposed voluntary guidelines would have no impact on obesity and would constitute an unjustified infringement on the free speech rights of the industry.<sup>34</sup> Industry resistance was effective – in December 2011, Congress delayed finalization of the voluntary guidelines by requesting a cost-benefit analysis of the proposal.<sup>35</sup>

Although standards made in cooperation with industry are not inherently weak, particularly if monitoring and enforcement safeguards are employed, the fundamental economics of the food industry’s business model create strong incentives for industry to weaken and/or not comply with voluntary self-regulation initiatives. Obesity is caused in large part by excessive food consumption, but the industry’s profits depend on selling consumers ever more food, including those food products with the highest profit margins – highly processed foods with little nutritional value.<sup>36</sup> With such conflicting incentives (the good public relations that come from a voluntary code vs. the profits that come from selling unhealthy foods), it is a predictable result that voluntary self-regulation by the food and beverage industry has failed to meaningfully impact the obesity epidemic.

### III. GLOBAL MOVEMENT TOWARD MORE EFFECTIVE REGULATION: STRENGTHENING OF EXISTING INITIATIVES AND USE OF NOVEL APPROACHES

#### A. THE TRADITIONAL REGULATORY APPROACH: TAXATION AND EDUCATION



After 1970, most developed societies began to observe trends toward obesity in their populations. Recognizing the inherent limitations of industry self-regulation, many countries have taken steps to address rising obesity rates through public health interventions, including through regulation of the food and beverage industry. In the first incursions, starting in the early 1980s, policymakers naturally veered toward control policies that fit neatly within the reigning “personal responsibility” framework, particularly taxation of unhealthy foods and beverages and educational campaigns urging individuals to make healthier lifestyle choices. Both of these strategies view obesity narrowly, as a personal problem driven primarily by individual behavioral choices, rather than as a societal epidemic that has exponentially worsened in the last quarter-century.

“Sin taxes” on unhealthy foods and beverages have long employed by many governments, particularly in developed countries. For example, 23 states in the U.S. have taxes on sugar-sweetened beverages, ranging from 1-8%, and Norway has taxed sugar, chocolate, and sugary drinks since 1981.<sup>37</sup> However, industry opposition to meaningful taxation of unhealthy foods ensured that initial taxation policies were weak and narrowly applied. And among lawmakers the taxes were largely viewed as revenue raising measures, not serious attempts to deter the consumption of unhealthful products. For example, Fiji taxes imported soft drinks (which are the exclusive source of soft drinks in Fiji) at only 5%, and Australia taxes soft drinks, confectionary, biscuits, and bakery products at only 10%.<sup>38</sup>

Public health research supports the notion that taxes must meet a minimum threshold to have a deterrent effect on consumer behavior. A newly published study cautions that the use of taxes to improve public health must be undertaken at a level of approximately 20% across a broad array of foods before the tax would meaningfully impact obesity.<sup>39</sup> The authors also urge recognition of the possible unintended consequences of applying more significant taxes (e.g., substitution of the taxed unhealthy product with an untaxed unhealthy product, necessitating taxation on a broad range of unhealthy foods). Moreover, there are concerns about the need for further measures to offset the regressive nature of food taxes.<sup>40</sup>

Similarly, educational campaigns urging a healthy lifestyle are a staple of many governments’ obesity prevention regimes. In the U.S., the well-known food pyramid (now re-conceived as “choosemyplate.gov”),<sup>41</sup> intended to educate consumers about a healthy diet, has been in existence since the early 1990s (and different versions of dietary guidelines preceded the pyramid itself)<sup>42</sup> Such campaigns are politically uncontroversial and have become commonplace among developed countries, nearly all of which have them in place to some degree as part of their national health programs.<sup>43</sup>

#### B. THE NEXT STAGE OF EVOLUTION: COMBATING OBESITY THROUGH INCREASED USE OF LAW, AND THROUGH USE OF STRONGER AND NOVEL TYPES OF LAWS.

Although taxation and educational campaigns have been the traditional approach to addressing obesity, recent interventions undertaken by countries around the world point to both a strengthening of existing legal measures and a widening of the range of legal measures employed to combat obesity. Moreover, where legal measures to combat obesity had primarily been used

by high-income countries, the last decade has seen an increased willingness by countries around the globe – high, middle and low income – to adopt and strengthen laws to combat obesity.

*1. Strengthened Tax Measures: More Use, Higher Amounts, with a Public Health Purpose.*

As discussed above, the use of taxation to shape dietary choices is not novel – many countries have employed such taxes for many years. However, the trend over the course of the last decade has been a marked strengthening of tax measures, as well as the expansion of taxation to new types of food products. One of the most well-known examples is Denmark's widely publicized "fat tax": the first tax on saturated fat in certain foods, applying to foods with more than 2.3 percent saturated fat, with the stated intent of combating obesity and heart disease.<sup>44</sup> Similarly, Hungary enacted a so-called "hamburger tax" in late 2011 on foods with a high sugar or salt level, with plans to use the money to finance healthcare,<sup>45</sup> and France enacted a "soda tax" effective in January 2012, though a small one (approximately 1 euro cent per container).<sup>46</sup>

The French tax was framed primarily as an austerity measure, not a public health intervention, and involved a modest-sized tax. Even so, industry adamantly opposed the tax, warning that it could lead to a price increase of 10 to 35 percent on soda.<sup>47</sup> And although the tax was framed as a deficit reduction measure, press commentary indicated that the legislation was "part of a growing trend in Europe to impose sin taxes on food and drinks associated with poor health and obesity."<sup>48</sup> Indeed, in recent years, Finland, Norway, and the United Kingdom have added taxes of varying amounts on certain types of unhealthy foods. However, the future path of countries toward increased taxation is likely to be one marked with controversy, as evidenced by the recent repeal of the Danish "fat tax" on the grounds that the tax was harming consumers and businesses by raising food prices.<sup>49</sup>

Still, even with uneven progress on taxation measures (as evidenced by the Danish fat tax repeal), an encouraging sign is the global spread of taxation of unhealthy foods and beverages. Today it is increasingly the case that the taxation of unhealthy foods and beverages is no longer limited to high-income countries. In 2007, Nauru imposed a 30 percent tax on imported sugar, candies, soda, and flavored milk,<sup>50</sup> and in 2009, Fiji imposed a 15 percent tax on cookies and candies--a natural successor of its soft drink tax imposed in 2006 and later reduced in 2007.<sup>51</sup> Samoa offers a good example of the strengthening of tax measures, as in 2008 the country increased its tax on soft drinks, from \$.10/liter to \$.15/liter.<sup>52</sup> Other developing countries with recently enacted "fat taxes" include Papua New Guinea, Kiribati, Niue, and Tuvalu,<sup>53</sup> as well as French Polynesia.<sup>54</sup> Importantly, international trade law mandates national treatment for 'like' products. Consequently, if a state imposes taxes only upon imported goods, and not their similar domestic goods, aggrieved trading partners can claim violations of the World Trade Organization's General Agreement on Tariffs and Trade (*see infra* Section III.B.7).

*2. Public Education, Counter-advertising and Health Campaigns: More Initiatives, Stronger and Broader Messages*

In the past decade, more countries have initiated concrete efforts to educate their populations about the importance of healthy eating and physical activity as risk factors for obesity. Educational initiatives have long been in place in many countries. However, there is now a strong body of evidence to suggest that, in the absence of regulatory controls on the availability of unhealthful foods, education alone cannot substantially mitigate rising rates of obesity worldwide.<sup>55</sup> Recent measures focused on educating the public have, however, been more hard-hitting than previous ones, and there is some evidence from tobacco research that powerfully-imaged advertising featuring health warnings can impact public opinion.<sup>56</sup> Hard-driving counter-advertising campaigns have begun to spring up at the national and the sub-national levels.

For example, in 2009, New York City undertook its “Man Drinking Fat” campaign, which graphically depicts “gobs of human fat gushing from [a] soda bottle.”<sup>57</sup> In 2012, the city took the campaign even further, running ads linking soda consumption to amputations caused by diabetes.<sup>58</sup> Beyond New York, a city well known as an early adopter of progressive public health measures,<sup>59</sup> other progressive jurisdictions have demonstrated greater willingness to make strong public claims concerning obesity and its risk factors. In June 2012, the Western Australian Health Department launched its “LiveLighter” campaign, featuring graphic images of obese persons with messages such as “Grabbable Gut Outside Means Toxic Fat Inside.”<sup>60</sup> The campaign was billed as a “world first,” with the intent to “graphically portray the effects of being an unhealthy weight.”<sup>61</sup> The government intends that LiveLighter “will encourage and support Western Australians to make positive lifestyle changes and maintain healthy behaviours.”<sup>62</sup>

The past decade has also brought along a broader swath of countries to engage in educational initiatives, and many on a broader scale. For example, in 2009 Colombia began a campaign promoting physical activity, healthy eating, and nutritional awareness in schools;<sup>63</sup> Caribbean Wellness Day (a day of promoting healthy lifestyles choices) was initiated in 2008;<sup>64</sup> Mexico has implemented programs to raise awareness of hypertension and improve detection and treatment of the condition;<sup>65</sup> and a Central America Diabetes Intervention (CAMDI) program is now in place in Guatemala, El Salvador, Nicaragua, and Honduras.<sup>66</sup> Cameroon has begun a 10-year plan on health promotion, involving the creating of public health departments and health promotion activities.<sup>67</sup>

As the obesity epidemic has spread, Brazil has updated its “Agito Sao Paulo” campaign (begun in 1996) to encourage healthy lifestyles,<sup>68</sup> and Thailand’s ministry of health has engaged in multiple campaigns to promote exercise in the first decade of the twenty-first century.<sup>69</sup> Finally, India has seen the emergence of community-based interventions for NCD prevention and control in low-income urban settings, involving advocacy, mediation, and training campaigns,<sup>70</sup> and since 2008 India has begun a national program on diabetes, cardiovascular disease, and stroke (obesity being a risk factor for all three).<sup>71</sup> The spread of these educational campaigns to a wide range of countries and the increasingly hard-hitting nature of the campaign messages evidence a trend toward a higher level of government focus on combating obesity and a willingness to make stronger statements about the obesity risk factors of poor diet and insufficient physical activity.

### *3. Labeling: More Information on More Food Products*

As with education and taxation, food labeling is not new in and of itself. In the United States, for example, the Nutritional Labeling and Education Act has required some level of affirmative information disclosure on packaged foods since 1990,<sup>72</sup> and many other countries have similar requirements. However, over the course of the last decade there have been a number of new initiatives, all with the objective of enabling consumers to make more informed, and healthier, decisions about which foods to consume. These measures have been aimed not only at expanding the range of products for which information must be provided to consumers (e.g., restaurant and prepared foods), but also at increasing the required disclosures (e.g., requiring trans fat levels to be specified), as well as requiring that the information be provided in a way that consumers can understand it.

As a first step, some countries that have not historically required significant nutritional labeling of food have adopted new regulations. In 2011 Cameroon adopted the Law Framework on Consumer Protection, mandating that information on the nutritional value of foods, microbial content, and additives be clearly displayed on packaging. Similarly, in 2012, South Africa promulgated “Draft Regulations Relating to Foodstuffs for Infants and Young Children.” This will set standards for foods and restrict inappropriate marketing practices.

In addition to general nutrition labeling requirements, one major initiative has been the requirement that packaged foods add an additional line item disclosure specifying trans fat content. The public health justification for requiring this regulation is the uniquely harmful nature of trans fat to cardiovascular health.<sup>73</sup> Canada was the first country to require trans fat labeling in December 2005; the United States implemented a similar regulation that became effective in January 2006.<sup>74</sup> Since then, additional countries have required trans fat labeling, including Argentina, Brazil, Paraguay, Chile, Uruguay, South Korea, Hong Kong, and Taiwan.<sup>75</sup> From a public health perspective, some researchers consider the labeling requirements to have had a significantly positive impact. For example, a recent study documented sharp decreases in blood cholesterol levels in Americans since the U.S. began requiring trans fat labeling.<sup>76</sup> Public health advocates have pointed to this study as evidence of the effectiveness of labeling on two theories: that consumers will choose foods with less trans fat when presented with information, but also that food manufacturers were incentivized to sharply reduce the amount of trans fat in packaged foods once labeling regulations became effective.<sup>77</sup>

Similar dynamics are evident in the recent regulatory trend toward mandatory menu labeling in chain restaurants in the United States. Spearheaded by a small number of states and cities (New York City was the first jurisdiction to require menu labeling, followed by California),<sup>78</sup> menu labeling will now be mandatory across the U.S. for all restaurants with twenty or more outlets, as well as for vending machines where the operator has twenty or more machines.<sup>79</sup> The national menu labeling law preempts stricter state and local regulations of chain restaurants, and allows restaurants with fewer than twenty outlets to “opt in” to the federal scheme if they choose (which is primarily relevant if a state or locality has a stricter regulation in place that applies to small restaurants).<sup>80</sup> Though other countries have not immediately followed suit in enacting menu labeling laws, public health officials and advocates in varied jurisdictions, including the UK and Canada, have begun to strongly urge the passage of legislation similar to the U.S. law.<sup>81</sup>

#### 4. *Built Environment: Promoting Easier Access to Healthy Foods*

One of the more controversial issues surrounding the obesity epidemic is the role of the built environment on an individual's ability to make healthy food choices. If there are many environmental and structural obstacles to obtaining healthy foods—lack of supermarkets, lack of public transportation, unsafe neighborhoods—individuals are incentivized to opt for the less healthy food options that are easier to obtain. There are two components to accessing healthy foods: physical accessibility and economic accessibility.

The main strategy to increase economic accessibility involves decreasing the cost of fresh fruits and vegetables to consumers. While the U.S. has long had programs to support low-income persons' ability to purchase food (via the Supplemental Nutritional Assistance Program (SNAP), formerly known as "Food Stamps"), in recent years there have been initiatives designed to steer the use of those dollars toward healthier foods. The USDA recently announced grant awards of \$4 million for state agencies to allow farmers markets to purchase "SNAP machines" to process the SNAP debit card payments.<sup>82</sup> This program will open farmers markets to at least some of the 46 million SNAP recipients in the U.S. Even more directly, some cities have begun to subsidize the purchase of fresh fruits and vegetables at farmers markets. In Philadelphia, SNAP recipients who spend \$5 on fresh fruits and vegetables receive a \$2 coupon for additional food, and similar programs are in place in a number of jurisdictions nationwide.<sup>83</sup> Though direct subsidization of consumer purchases of fruits and vegetables appears presently to be unique to the U.S., farm subsidies for fruit and vegetable growers have long been in effect in many countries in the EU, and have served to moderate the prices of fruits and vegetables relative to other foods.<sup>84</sup> It remains to be seen whether other countries will adopt similar economic accessibility measures to those in the U.S.

Making healthy food more physically available has been a topic of much commentary and analysis in recent years, primarily around the concept of "food deserts" – areas without access to healthy foods, which are often also saturated with junk food outlets and corner stores specializing in less healthy alternatives.<sup>85</sup> Physical accessibility encompasses more than the mere availability of healthy food—it depends on transportation options, public safety, community redlining and the density of fast food outlets that are legally zoned. In practice, most initiatives have centered on increasing the physical availability of healthy foods in underserved, low-income areas. Canada has been a leader in increasing physical accessibility, primarily through its Nutrition North Canada Program (formerly known as the Food Mail Program), which provides nutritious perishable food to isolated northern communities at reduced postal rates.<sup>86</sup> The program serves more than 70,000 people in 18 communities, shipping over 18 million kg annually. India has attempted to create additional transportation options as part of its obesity control program, through initiatives promoting the use of public transportation<sup>87</sup> and giving government priority to construct bike lanes and pedestrian paths.<sup>88</sup>

To a lesser extent, policymakers have enacted legislation seeking to *reduce* the number of purveyors of fast food, considered by many public health advocates to be presumptively unhealthy.<sup>89</sup> In 2008, the Los Angeles City Council enacted a temporary moratorium (in 2010 made effectively permanent) on the building of new fast food establishments.<sup>90</sup> Although certain

other jurisdictions have adopted similar regulations for aesthetic reasons, the Los Angeles ordinance is the first of its kind to be enacted on public health grounds.<sup>91</sup> The Irish government is currently considering a ban on fast food restaurants, but only around schools, on the theory that school interventions will be of limited success if students can access fast food immediately outside the schoolyard.<sup>92</sup> It remains to be seen whether additional countries will adopt similar zoning restrictions, but the emergence of such restrictions on public health grounds without an aesthetic justification represents an important shift in countries' willingness to think creatively about ways to combat the obesity epidemic.

### *5. School-Based Interventions: Moving Beyond Health Education through Bundled Strategies*

As with many of the initiatives discussed herein, school programs to promote access to healthy food are not new. Rather, the novelty lies in the scale and breadth of these programs in recent decades. New measures have included restrictions on the types of food products that can be sold in schools as well as required body mass index (BMI) screening of children. In some cases, traditional health education has been expanded to include cooking education, sometimes in local cultural traditions using indigenous foods, along with gardening programs, increased access to water in lieu of sugar-sweetened beverages, and healthy school lunch programs. These measures combined produce what can be termed “bundled interventions” that tend towards a more integrated approach to feeding and educating children about dietary health.

Since 1995, Brazil has had a National School Meal Program, under which healthy meals are considered a basic right of every student. The program has been accompanied by generous income supplements for rural families threatened by undernutrition, along with careful regulatory controls of food components to protect urban children currently experiencing growing rates of overweight and obesity.<sup>93</sup> As of 2009, Brazil's program requires that 30 percent of school meal funds be used to purchase locally produced foods, and a majority must be fresh fruits and vegetables.<sup>94</sup> When schools balked at the time and effort required to manage fresh produce, the government intervened by negotiating a compromise whereby local food producers would deliver pre-chopped and prepared produce to the schools.

In 2009, Colombia passed an “obesity law” designed to “reverse inactivity and obesity trends by promoting physical activity, healthy eating and nutrition education in schools.” Under the law, schools must provide healthy food (including fruits and vegetables), as well as educational programs emphasizing healthy eating.<sup>95</sup> Since 2003, Norway has expanded both the subscription and free versions of its School Fruit Programme nationwide, with the result that participating schools have seen an increase in the fruit intake of their students.<sup>96</sup> Spain has moved beyond subsidizing and/or mandating healthy food offerings, by enacting legislation banning the sale of food and drinks that have high amounts of saturated fat, trans fats, salt or sugar.<sup>97</sup> Similarly, in 2010 the Mexican senate approved an anti-obesity law that bans the “sale and advertising of food and drinks with high caloric content and low nutritional value” in elementary and middle schools.<sup>98</sup> However, contemporaneous commentary observed that a number of senators were “reluctant about the decision, worried about clashing with the interests of the food industry...[thus] although the law has been passed, parts of it will go back to being reworked and edited.”<sup>99</sup>

Japan has taken an arguably more holistic approach, revising the objective of its school lunch program in 2008 from promoting healthy development of the minds and bodies of schoolchildren to “promoting Shokuiuku” (“food education”).<sup>100</sup> Under the revised approach, students are responsible for serving lunch and clearing the dishes.<sup>101</sup> In addition, since 2007, the Japanese Ministry of Education, Culture, Sports, Science and Technology has supported the placement of “Diet and Nutrition Teachers” in schools, with the reported result that teachers and parents demonstrate an increased awareness and interest in diet.<sup>102</sup> Taken together, these bundled school interventions demonstrate an increased willingness of countries in most regions of the world to adopt increasingly strong legislation directed at fighting obesity in children through healthier school food programs.

In the U.S., a variety of initiatives have been adopted at the state and federal level. For example, Arkansas passed legislation in 2003 requiring that parents be provided with the BMI of their children, along with an explanation of what BMI means and health effects associated with obesity.<sup>103</sup> As of 2011, 10 U.S. states have followed suit in requiring that schools conduct BMI assessments of students.<sup>104</sup> In addition, in 2012 the U.S. Department of Agriculture has updated its standards regarding school nutrition programs for the first time in 15 years, as part of the Healthy, Hunger-Free Kids Act, adding a number of requirements that will improve the nutritional content of school lunches.<sup>105</sup> As a complementary measure to increasing access to healthy foods, many cities and school districts are enacting measures sharply limiting or banning outright the sale of unhealthy foods and beverages, particularly sodas and other sugar-sweetened beverages (SSBs). California was an early adopter of such restrictions, passing statewide legislation in 2005 eliminating soda sales from all schools.<sup>106</sup> As of 2011, 21 states prohibited sales of SSBs in school vending machines to some degree.<sup>107</sup>

#### *6. Advertising and Marketing Restrictions: Moving Beyond Bans on Marketing to Children*

Regulatory controls on the industry advertising and marketing of unhealthful foods have long been a source of significant controversy. Such initiatives tend to be roundly supported by public health advocates but are usually adamantly opposed by food industry trade groups, making the passage of such legislation a contentious, lengthy process. Even so, recent years have seen increased willingness of countries to enact stronger and broader advertising restrictions that may help combat the obesity epidemic—some going so far as to include restrictions on advertising to the general population. The historical trend has been to limit such restrictions to children first, on the theory that children lack the ability to distinguish fact from opinion and are thus unable to accurately assess marketing directed towards them. In a normative shift, some countries have shown a willingness to restrict advertising of certain products to the whole population as well, with some restrictions focused on product claims made by certain individuals (i.e., doctors, health professionals), on the theory that such ads are misleading to adults as well, and contrary to the country’s interest in promoting public health.

Quebec has long been a leader in restricting marketing to children, as its Consumer Protection Act has banned *all* marketing to children under age 13 since 1980, unless ads meet stringent requirements.<sup>108</sup> Similarly Norway passed legislation in 1992 banning television

advertising to children.<sup>109</sup> A number of other European countries, including Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Luxembourg, Liechtenstein, the Netherlands, Portugal, Sweden and the United Kingdom have some level of restriction on television advertising directed at children.<sup>110</sup> Beyond Europe, Australia and Canada also have strong regulations regarding advertising to children,<sup>111</sup> and in 2010 the South Korean government endorsed a bill prohibiting television advertising of high-calorie, low-nutrition foods from 5 p.m. to 7 p.m. However, these restrictions are generally applicable to all products, not merely food and beverages, and as Hawkes observed, there has been a trend in recent years among countries to propose – if not always pass – strong legislation directed specifically at food and beverage marketing to children.<sup>112</sup> Moreover, beyond television advertising, countries have shown a willingness to restrict advertising in other mediums, such as store displays and billboards.

As noted above, in addition to strengthened restrictions on marketing to children, certain countries have enacted legislation directed at the broader public. For example, in 2007, France adopted legislation requiring ads for processed, sweetened or salted foods on television, radio, billboards and the Internet to include a health message created by the government.<sup>113</sup> The legislation included relatively significant fines for noncompliance (1.5% of the cost of the ad).<sup>114</sup> In 2006, Spain adopted legislation giving the Spanish Food Safety and Nutrition Agency expanded regulatory powers, including the ability to bring causes of action to enjoin false or misleading ads,<sup>115</sup> and since 2011, Spain has forbidden doctors, scientists, and patients from recommending food products in advertisements, in addition to banning the promotion of food products through pharmacies.<sup>116</sup> Finally, the United Kingdom adopted legislation in 2008 creating stronger protection against ads that claim, “without any identifiable scientific evidence, to provide physical and mental health benefits such as tackling obesity or depression.”<sup>117</sup> Though the legislation was primarily directed at products such as pills, drinks, or creams – in recognition of the severity of the obesity epidemic (and the implied susceptibility of consumers to ads promising to help people lose weight) – its passage demonstrates the seriousness with which the UK government views the issue. If the trend among these few countries is a harbinger of future regulatory actions, public health advocates should expect an increased willingness among countries to consider broader and stronger advertising restrictions, including those directed at the general public.

#### *7. Restrictions, Standards, and Bans on Specific Ingredients: Strengthened Regulations in More Jurisdictions*

Some of the most contentious public health laws are those that severely restrict or even ban the use of specific ingredients or the sale of certain products deemed harmful to public health. One of the most high profile of such cases has been a ban on the use of artificial trans fats in restaurant and prepared foods. To date, in the U.S., 301 million people live in jurisdictions that have banned the use of trans fats in restaurant foods.<sup>118</sup> Denmark has taken a different approach to eliminating unhealthy ingredients in foods by adopting legislation that sets limits on the percentage (no more than 2%) of trans fat in oils and fats destined for human consumption; this appears to have sharply reduced artificial trans fat intake in Denmark.<sup>119</sup> Austria, Iceland, and Switzerland have also adopted legislation in recent years restricting trans fat content in foods.<sup>120</sup>



While progressive from a public health standpoint, restrictions on the use of artificial trans fat have perhaps been more politically palatable because artificial trans fats are man-made and unnecessary in nearly all food production. More controversially, some countries have enacted bans on the sale of particular natural foods, primarily fatty meats, on the grounds that such products are harmful to public health. It has been argued that such restrictions are a restriction on international trade in violation of legal commitments such as the World Trade Organization's Sanitary and Phytosanitary Agreement.<sup>121</sup>

For example, Ghana has enacted legislation "for human health reasons" prohibiting the sale of meats that exceed maximum fat content limits (25% for beef and poultry, 35% for mutton, and 42% for pork), and turkeys may not be imported unless their oil glands are removed.<sup>122</sup> Though this legislation was framed as an import restriction rather than a general ban (applying only to imported meats), the consensus view appears to be that the measure "controls imports in a manner designed to protect public health and to be acceptable internationally from a trade perspective."<sup>123</sup> Similarly, Samoa has adopted a ban on the sale of turkey tails, though it later lifted the ban in the face of pressure from international trade groups, imposing import tariffs instead.<sup>124</sup> Fiji adopted a ban on imported mutton flaps in 2000, and Tonga considered a similar ban in 2007. New Zealand and Australia, the prime exporters of the flaps to the Pacific Island nations, heavily lobbied against the bans, arguing that individuals would simply substitute a similarly fatty protein in lieu of the flaps, undermining the government's goal of improving public health.<sup>125</sup> The emergence of these measures suggests that governments in varied parts of the world are beginning to closely examine the dietary drivers of obesity and consider ways to improve diet through affirmative restrictions on the types of food products that may be sold.

#### *8. Screening and Brief Intervention: Targeting High-Risk Individuals*

Some governments have become even more aggressive in targeting the obesity epidemic by enacting legislation that requires the dietary-based health screening of individuals. In 2008, Japan passed its so-called "Metabo law" requiring screening for metabolic syndrome for all adults, treatment for those diagnosed, and fines on providers who have low participation or who fail to reduce rates of metabolic syndrome in their caseloads.<sup>126</sup> Under the law, men are required to maintain a waist circumference of 33.5 inches, and women a waist size of 35.4 inches. Though individuals do not face penalties for exceeding the waist size maximums or for failing to comply with the monitoring requirements (for those who fail the waist measurement test), employers and local governments are subject to financial penalties for failure to meet population health goals. These providers must ensure at least 65 percent participation, and the program's objective is to reduce the Japanese obesity rate by 25 percent by 2015.<sup>127</sup>

In the U.S., New York City enacted a regulation in 2005 requiring medical laboratories to report results of all hemoglobin A1C tests, thereby creating the country's first population-based registry to track blood sugar levels in diabetics, with the stated goal of "better understand[ing] the epidemiology of diabetes" in New York and providing a basis on which to design future interventions.<sup>128</sup> The program has led to concerns about infringement on individual privacy, as the test results must be reported together with a patient's name, address, and date of birth and are therefore personally identifiable.<sup>129</sup> In addition, the program is also intended to allow the government to "report a roster of patients to clinicians, stratified by patient A1C levels,

highlighting patients under poor control (e.g., A1C > 9.0%) who may need intensified follow-up and therapy.”<sup>130</sup> To date, no other jurisdictions appear to have adopted law similar to those in Japan and New York, which may be evidence that public health advocates and legislators remain unconvinced that the benefits of such programs outweigh the cost and infringement on individual privacy.

#### *9. Integrated Programs to Promote Sustainable Agriculture, Environment and Healthy Food: The New Frontier*

Arguably the most progressive policy regimes for combatting obesity today are multisectoral, integrated ones that link systems of food production and transport, with food distribution and trade, in ways that promote the health of the environment and the health of people, by making healthy food choice maximally available. Such approaches require regional and national authorities to support and promote the decentralization of food production and consumption to the local or community levels. A central tenet of these programs is that by and large, local production and consumption of food tends to promote sustainable agricultural practices as well as possible advantages in nutritional health more than large-scale industrialized agribusiness operations that dominate the global food system. These integrated programs seek to create conditions in which all people have access to not just adequate caloric intake, but also nutritionally sound dietary options. An inter-sectoral approach includes productive, active engagement of government with the private sector, and across stakeholders, including agriculture, food production, consumption, education and nutrition.

A key example is Thailand’s Strategic Framework for Food Management, which represents one of the most comprehensive efforts of this kind. This effort was stimulated by the government’s awareness of rising rates of NCDs, and the willingness of local academics to form multisectoral teams that became very active in governmental planning around agriculture, nutrition and health. At the center of the effort is Thailand’s National Food Committee that coordinates and manages all laws and over 30 government units dealing with food, and that elevates food policy by placing Food and Drug Administration director, Ministry of Agriculture director and prime minister in committee leadership roles. Multisector teams manage all aspects of safety problem, transport, education, cultural messaging, food supply and access, environmental concerns and agricultural resources. At its base is a food production and consumption approach focused at the village or community level. Community-based health providers and community leaders are the key interface with higher levels of the system functioning in a supportive role

#### IV. THE PATH FORWARD: TOWARD AN INTERNATIONAL LEGAL STRATEGY

The confluence of factors leading countries to engage in new and varied legal interventions to combat the obesity epidemic is unprecedented. In view of this emerging trend, there may for the first time be political space for a much-needed global strategy to address some of the primary obesity contributors, such as food composition, international trade in unhealthy food, and food and beverage marketing to children.

Obesity is now a globalized phenomenon whose drivers are beyond the reach of national governments alone. Thus, a global framework with comprehensive and cogent global standards may be the only way to meaningfully address this epidemic. The challenge of implementing voluntary self-regulation and national regulations surrounding healthy diet and lifestyle choices, particularly in resource-poor countries, highlights the need for a global framework incorporating meaningful international standards as well as effective legal and institutional mechanisms, including information sharing, reporting and monitoring. In that regard a global framework could strengthen the capacity of countries to act in support of public health legislation.

In response to rising public concern about global obesity trends, there have been a number of proposals in the last several years calling for new frameworks to address the obesity epidemic. These proposals can roughly be divided into three categories. First, some scholars as well as industry representatives have continued to urge for traditional voluntary approaches and strengthened partnerships between industry and governments.<sup>131</sup> However, given the widely known fact that industry-driven voluntary ‘pledges’ have proven to be insufficient to stem the growing obesity epidemic even in high-income countries, such proposals for strengthened voluntary action have encountered considerable skepticism in the public health community. Second, inspired by the perceived success of WHO’s first treaty, the Framework Convention on Tobacco Control, a number of commentators have specifically called for a framework convention on obesity<sup>132</sup> and, most recently, the influential journal the *Lancet* has joined the chorus in support for the codification of such a treaty.<sup>133</sup> Finally, a number of commentators,<sup>134</sup> including civil society organizations, have proposed the elaboration of an International Code of Practice on the Marketing of Unhealthy Food and Non-Alcoholic Beverages to Children.<sup>135</sup> This neglected idea has recently received renewed attention and legal refinement in a proposal by Taylor and colleagues to develop a WHO/UNICEF Global Code of Practice on the Marketing of Unhealthy Food and Beverages to Children as a first step leading to the eventual codification of a treaty in this realm.<sup>136</sup>

Any future international legal strategy should address the tensions between the protection of global public health and international trade law. It is widely recognized that trade liberalization and market integration have been factors in the rise of NCD generally,<sup>137</sup> and in particular, have facilitated the trend towards higher consumption of sugars, fats, meat and processed foods at the global level and low and middle-income countries.<sup>138</sup> There is no shortage of policy statements that support public health protections against obesity: In 2003, the World Health Organization (WHO) argued for a paradigm shift in global food policy focusing on diet, tobacco and alcohol together as causes of NCD worldwide.<sup>139</sup> In 2007, the World Health Assembly published a resolution stressing the need for greater coordination in the development of trade and health policies,<sup>140</sup> which was later reaffirmed by foreign ministers in the Oslo Ministerial Declaration.<sup>141</sup> And that same year, the World Bank recognized the increasing burden of chronic disease on the poor.<sup>142</sup> More recently, in 2011 the United Nations General Assembly convened a high-level meeting on NCDs, which resulted in the unanimous adoption of a political declaration on the prevention and control of NCDs.<sup>143</sup> However, as briefly described in the section on food bans above, there exist international trade obligations that may substantially impede action on these goals.

While scholarly work is underway on the consideration of alternative international legal strategies that can be developed to address the globalization of the obesity, more can be done at the global level to assist states in their efforts to counter the epidemic through domestic legal tools. As a first step, there is a need for more research regarding existing legislation targeting obesity. This article has made an important start in identifying trends in recent legislation; however, research in this area is limited by the lack of a comprehensive database. A global database of obesity-related legislation would provide a valuable resource for all countries, reflecting and reinforcing what countries are already doing while at the same time facilitating sharing of best practices, and possibly assisting public health advocates in marshaling political will in support of legislation. This Article aims to be the initial step in the direction of such a global database.

## V. CONCLUSION

The epidemiological evidence clearly demonstrates that obesity epidemic is a problem of potentially catastrophic dimensions from both a public health and economic perspective that demands urgent action, given the correlation between obesity and host of chronic diseases. National and international policymakers facing choices regarding public health interventions to address obesity will argue for action at different thresholds of evidence. Part of what should define this threshold is the cost of not taking action while waiting for an even more robust evidence base. In the case of rising NCD rates, the costs of inaction have already been quantified in the pages of *Lancet* — an estimated 35 million people will continue to die from NCD annually, with 80% of these deaths occurring in low- and middle-income countries. Projections like this should point policymakers towards a cluster of risk factors that can be effectively controlled through policies placing reasonable limits on the marketing and availability of a few commodities. We submit that the emerging evidence on the health detriments of unhealthy food and beverages and their role as a proximate cause of NCD should help inform national public health policy and a new global strategy to address the shifting worldwide burden of disease.

The traditional tools of relatively mild taxation and educational campaigns have done little to nothing to stem the global rise of obesity. In recognition of the critical nature of the epidemic, countries have been increasingly willing to impose stronger educational and tax initiatives and to build on those measures by employing different and novel techniques to combat obesity, moving beyond a “personal responsibility framework” to a framework in which interventions seek to address broader social determinants of health. This evolving global trend towards strengthened national action should inform and inspire public health regulatory initiatives in countries worldwide. Moreover, the emergence of this global trend may create political and policy space for a much-needed global legal framework for addressing obesity. Importantly, in order to submit unilateral national efforts and promote best practices and coordinated global action, there is a strong need for a global database of legislation addressing the drivers of obesity and NCDs. Regardless of the means selected, in view of the obesity and NCD epidemics and the global trend toward broader and stronger obesity legislation, it is an

appropriate time for the public health community to move toward a global framework to address the primary drivers of obesity.

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