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Actively Combating Childhood Weight Gain: An Evaluation of Federal Policy Interventions

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America's children and adolescents are facing a childhood obesity crisis that impedes their ability to become healthy adults. This epidemic has drastic economic impacts because the nation shares public health care costs, and there is little incentive for states to act without federal support. In order to address this problem from a national perspective this paper analyzes three different levels of federal interventions. Each alternative presents a policy to increase the amount of physical activity children engage in daily. The paper evaluates each of the different levels of intervention by assessing the strengths and examining the hurdles these levels of intervention face on the road to implementation.

Introduction

Childhood obesity poses a very real threat to the health of our society. The implications of an obese society are vast, the most important of which is the strain it will continue to have on rising health care costs. While a recent study in the *Journal of the American Medical Association* showed that obesity incidence in the general population is leveling off, the same study unfortunately revealed that boys ages six through 19 in the highest weight range are getting even larger (Ogden 2010). Additionally, it should be pointed out that "leveling off" does not mean obesity rates are decreasing. Recent reports from the National Center for Health Statistics state that 17.1 percent of children and adolescents two to nineteen years of age are overweight (CDC 2006). This issue must be addressed because children who do not learn healthy lifestyle choices early in life are overwhelmingly likely to be overweight or obese adults (Whitaker et al. 1997).

Following an overview of the scope and severity of the childhood obesity epidemic, this analysis will narrow the causes of obesity and identify solutions aimed at increasing physical activity levels in children. This paper focuses on federally based interventions because when the final cost such as health care is shared by society at large, there is little incentive for states to singularly combat their localized epidemics. Ultimately, this paper will explore the effectiveness and feasibility of three different types of federal responses to childhood inactivity: a mandate, a public awareness campaign, and community-led intervention. The evaluations of these potential efforts will demonstrate the range of considerations and roadblocks lawmakers and policymakers face when attempting to impact the complex lifestyle choices Americans face.

Scope and Severity

The prevalence of childhood obesity has many repercussions. Most alarming are projections estimating that this generation of overweight and obese children will be the first generation since the

Great Depression to have a shorter life span than its predecessors (Olshanky et al. 2005). The main health threats caused by obesity that will make themselves known as today's children get older are: diabetes, heart disease, stroke, and possibly cancer (Trasande et al. 2009). However, even before adulthood there are immediate repercussions. Overweight and obese children risk bone and joint problems, sleep apnea, and social and psychological problems (CDC 2010a).

Besides physical health issues, evidence suggests that children with unhealthy lifestyles, defined by poor nutrition and inactivity, also have difficulty achieving academically. A study published by the *Journal of the American Dietetic Association* sought to connect the relationships of body weight, nutrition, and academic performance. The study found that eating breakfast, which is also associated with a lower Body Mass Index (BMI), can improve "cognitive function related to memory, test grades, and school attendance" (Rampersaud et al. 2005, 743). Other studies indicate that regular physical activity leads to favorable classroom behavioral outcomes and does not take away from academic achievement (Strong et al. 2005). In fact, a more recent study found positive correlations between standardized testing results, especially in math, and physical fitness levels (Chomitz et al. 2009). Finally, studies have also correlated physical activity with increased self-esteem in children (Tremblay et al. 2005). It is highly likely that overweight and obese children will face both physical and mental health consequences as a result of poor nutrition and sedentary lifestyles.

Not only are these children in jeopardy of not reaching their full potential, but their health care needs will continue to increase, costing society, not individual states, billions of dollars. The annual medical cost of obesity-related illnesses has grown over the past decade and is now estimated to be almost $147 billion (CDC 2009a). The problem is compounded by the fact that a significant portion of federal spending stems from the low-income health care program, Medicaid. According to the Centers for Medicare and Medicaid Services, Medicaid spending will reach $794 billion by 2019 (DHHS 2011). Moreover, adolescents who are covered by public insurance or have no insurance at all are more likely to be overweight (Haas et al. 2003). Regardless of income level, "per capita medical spending for the obese is $1,429 higher per year, or roughly 42 percent higher, than for someone of normal weight" (Finkelstein et al. 2009, w828). No matter the cause, obese children and adults are prone to having higher health care costs.

This connection highlights the debate about the relationship between socioeconomic status and obesity. Many studies have questioned this connection with mixed results, which are further confounded by racial disparities. Surely individuals at lower socioeconomic levels have uniquely compounding factors that contribute to incidence rates. But as Wang and Zhang (2006) discovered in their study, the overall association between socioeconomic status and weight is weakening. Low-income groups and high-income groups were both at risk of being overweight. Moreover, the Presidential Task Force on Childhood Obesity recently noted in its report that a high socioeconomic status is positively correlated with the rate of obesity in African-American girls (White House 2010). Lacking substantial evidence to determine if targeting only low-income groups will reduce the epidemic, this analysis identifies policies that have a broad scope, with the goal of targeting children of all socioeconomic levels, ethnicities, and genders. The need for further research to precisely target potentially high-risk groups could delay the creation and implementation of policies that may be broadly effective immediately. Weight gain does not discriminate, and what is most important is identifying a solution that cuts across all groups regardless of subtle contributing factors.

The Causal Puzzle of Childhood Weight Gain

The fundamental cause of obesity is an imbalance between food intake and energy expended during physical activity. The accepted standard for measuring obesity is BMI, which is determined by a person's weight to height ratio (CDC 2011a). A child who is in the 85th percentile is considered overweight, while at the 95th percentile a child is deemed obese (CDC 2011b). Since the 1980s the number of children in the 95th percentile has more than tripled (Ogden et al. 2010). There are many complex and interrelated causes of this lifestyle imbalance among children. A few examples include increases in food advertising directed at children, and more time spent engaging in sedentary forms of entertainment such as video games.

Many forms of government intervention pertaining to obesity focus on poor nutrition. For instance, the United States Department of Agriculture (USDA) is running a pilot program titled Healthy Incentives under its Supplemental Nutrition Assistance Program (SNAP), which is aimed at promoting the purchase of fruits, vegetables, and other healthy foods (USDA 2010). Even more recently, in December 2010 President Obama signed into law the Healthy, Hunger-Free Kids Act, which sets standards for healthy school meals and provides additional funding to help schools meet these standards. Children of different ethnicities, genders, and socioeconomic statuses face a variety of nutrition and food intake challenges. These policies mainly focus on low socioeconomic status children, but the causal relationship is still unclear. Focusing on the food intake aspect of the issue will not sufficiently address the problem. Simply put, the vast majority of children and adolescents are inactive; therefore, this paper will focus on the physical activity factors that contribute to childhood obesity. Further supporting this focus, a study published by the National Academies Press demonstrated that the benefits of increasing physical activity in schools were "experienced across diverse racial, ethnic, and socioeconomic groups, among boys and girls, elementary and high school students, and in urban and rural settings" (ACS, ADA, and AHA, n.d.). It is hard to dispute the fact that all children can and will benefit from increased physical activity, starting with potentially decreasing obesity rates.

The US Department of Health and Human Services recommends that children and adolescents participate in 60 minutes of moderate to vigorous physical activity each day, yet most children are not meeting this guideline (Nader et al. 2008). According to a study published by the *Journal of the American Medical Association*, almost all children at the age of nine reached the daily recommended 60 minutes of moderate to vigorous physical activity throughout the week, but by age 15 only 31 percent met the guidelines on weekdays and only 17 percent on weekends (Nader et al. 2008). Moreover, according to the CDC (2010b), only 47 percent of ninth graders in 2009 participated in daily physical education (PE) at school. Evidence from a study by Johns Hopkins University shows that for each weekday adolescents participated in physical education, they reduced their likelihood of being an overweight adult by five percent; for five days per week of physical education their odds were reduced by 28 percent. (Menschik et al. 2008). Forty-eight states currently have some form of mandatory physical education, but only Illinois and New York have K–12 physical education standards that include mandatory levels of duration and frequency (NCSL 2005). The implications of this lack of physical activity are concerning; from this inactive beginning, many adolescents are at risk of becoming inactive and unhealthy adults.

Decreases in the amount of physical activity experienced by children and adolescents can be attributed to numerous factors. The most significant are: a decrease in physical education classes in schools, an increase in the amount of

hours spent watching television and/or playing video games, and to a less known extent, the fact that fewer children are walking or riding bikes to school. One study published by the American Medical Association showed that the odds of being overweight among children ages 10–15 were "4.6 times greater for those watching 5 hours of television per day compared with those watching for only 0 to 2 hours" (Gortmaker et al. 1996, 356). What's more, the odds were very similar regardless of socioeconomic status (Gortmaker et al. 1996). Essentially, children who engage in high levels of television viewing tend to be the most overweight (Ebbeling et al. 2009).

Besides television viewing rates, another significant cause of low energy output is the reduced physical education occurring in public schools. There are concerns that budget constraints and academically focused policies such as No Child Left Behind may reduce the amount of time children and adolescents spend in physical education classes and in recess (Doheny 2005). Not only are children experiencing a decrease in time spent in physical education, but the little time they do spend in physical education classes has gone down in quality (CDC 2010c). According to the American Cancer Society, the American Diabetes Association, and the American Heart Association (n.d.), "the quality of the physical education program, not just the time spent on the class, is the foremost concern." One measure for the quality of instruction is the amount of time students are engaged in high levels of physical activity during physical education class (CDC 2010c). It is recommended that students be physically active at least 50 percent of the time they are in physical education classes, yet numerous studies have shown that students in typical physical education classes are physically active for less than 50 percent of the class period (CDC 2010c). In California, students who are in large physical education classes are physically active only 10 percent of the time (California Endowment 2007). This decrease in the quality and quantity of physical education is adversely affecting the health of our nation's youth. A study that sought to measure the effects of physical activity intervention programs in school-aged children found that greater levels of exposure to physical activity in schools were associated with smaller increases in BMI. Moreover, children exposed to activity in schools proved to be more active when not in school (Donnelly et al. 2009).

Finally, the growing number of children who are either bussed or driven to school has also contributed to the obesity epidemic. According to the CDC (2005), "[i]n 1969, approximately half of all schoolchildren walked or bicycled to or from school…[t]oday, fewer than 15% of children and adolescents use active modes of transportation." There is little exacting research on the underlying causes for this change, but it is likely that this increase has been the result of a widespread reliance on car travel, a perceived lack of safety due to crime, and a lack of sufficient infrastructure in the built environment such as sidewalks and crosswalks. Positive changes are occurring that could influence physical activity levels in urban and suburban communities; this is evident in President Obama's urban policy agenda, which calls attention to the importance of the built environment. Moreover, the Obama administration's new focus on previously exclusive state issues such as urban policy demonstrates the importance of federal intervention when the economic impacts of a community's well-being are potentially substantial. While there is general agreement that community efforts to create opportunities for children to be active in their neighborhoods, such as walking and biking to school, contribute to healthy lifestyles (Sallis and Glanz 2006), there is still little state incentive to spend in the short term, especially without federal support.

Federally Led Intervention Options

President Obama's 2011 budget contains encouraging policy changes aimed at combating obesity (The White House, Office of the First Lady 2010). Additionally, First Lady Michelle Obama's "Let's Move!" campaign, which just celebrated its one year mark in February of this year, has begun addressing the childhood obesity epidemic on multiple fronts. However, many of these policies and initiatives are aimed at the food intake side of the issue. For instance, "Let's Move!" initiatives include calls for front-of-package calorie labeling, increasing neighborhood farmer's markets, and altering the USDA food pyramid (The White House, Office of the First Lady 2010). Despite the fact that these initiatives are important steps towards healthier children and families, and contrary to the title of the campaign itself, much of the First Lady's campaign appears to treat physical activity as an afterthought. In the hopes of adding to this already positive shift in the national conversation over childhood obesity, the focus of this analysis will be on broad reaching physical activity based policy options.

The most broad and obvious policy alternative is mandating physical education in schools. This policy alternative is based in the public school system, and will reach an estimated 56 million K–12 children (US Census Bureau 2010). It would require the implementation of physical education standards into national education policy, for which there are currently no such standards. To be effective, this policy should meet the National Association for Sports and Physical Education (NASPE) standards of 150 minutes of physical education for elementary school children, and 225 minutes for middle and high school students per week for the entire school year (NASPE and AHA 2010). Moreover, standards are needed to ensure that students are engaged in moderate to vigorous physical activity during these classes (CDC 2010c). Additional standards should be set for physical education teachers, curriculum, and assessment tools to measure student progress (ACS, ADA, and AHA, n.d.). Policy standards such as these would ensure complete equality in physical education quality and quantity.

An alternative policy option is to reinstate or reinvent the public awareness campaign "VERB. It's What You Do.," which was funded primarily by the Centers for Disease Control from 2002–2006. This advertising campaign is a focal point for this paper because it consisted of advertising entirely focused on increasing physical activity levels in children, unlike the recently launched national "Let's Move!" public service announcement campaign. "Let's Move!" has partnered with Department of Health and Human Services, the US Department of Agriculture, and the Ad Council to sponsor a variety of public service announcement ads aimed helping parents make better food choices and increase the time their children spend in physical activity (Ad Council 2011). Some of the "Let's Move!" sponsored ads do use professional athletes to encourage physical activity; however, despite the sheer volume of the recently launched healthy living ads, to be featured on 33,000 media outlets nationwide, none appear to be as highly targeted as the VERB campaign was during its run (The Ad Council 2011).

The VERB campaign used extensive analysis to develop marketing techniques and strategies to reach children ages nine to 12 years old, commonly referred to as tweens (CDC Foundation 2003). A study that measured VERB recognition in Lexington, Kentucky, found that among fourth and fifth graders there was 90 percent brand recognition, compared to the already impressive 74 percent tween recognition nationally (Florida Prevention Research Center 2007). The campaign encouraged children to get active by discovering their own "active verb." It also used specific media outlets and strategic community partnerships to reach various demographics and eth-

nicities. The campaign included celebrity spokespersons, contests, and custom materials for schools. The initial budget was $125 million, and included an additional $75 million from private media companies (CDC Foundation 2003). Awareness of the benefits of an active lifestyle is an important step in changing the habits of children and their families.

One relatively new and creative solution for getting children more active is to increase the percentage of those either walking or bike riding to school. To support this effort, the federal government could consider increasing funding for the Safe Routes to School program. Initial funding for Safe Routes To School began in 2005, from the US Department of Transportation's Federal Highway Administration Office of Safety, and was funded at $612 million over five federal fiscal years (FY 2005–2009) (National Center for Safe Routes to School, n.d.). Benefits include not only increases in physical activity, but also increases in local hiring needed to build, police, and maintain safe routes to school. The program also cuts down on car travel, thereby decreasing congestion. Due to the multiple positives, Safe Routes to School should be funded adequately.

Criteria for the Evaluation of Federal Policies

In order to evaluate potential federal policy options of varying degree for increasing the physical activity levels of children, this analysis will consider specific criteria chosen to highlight the policy's implementation feasibility in relation to its overall effectiveness.

Effectiveness

The effectiveness of the proposed policy alternatives will be based upon the combination of two factors: a time increase in the moderate to vigorous physical activity of children as well as measured decreases in BMI of participating children. Both of these factors are quantifiable measures of positive change.

Administrative Feasibility

Policies will be measured by the ease, speed, and number of personnel it will take to implement and maintain changes. This also includes the involvement of private and/or nonprofit entities and how their participation can aid the administrative process.

Political Feasibility

The political battles these policies face on the road to implementation will be evaluated. This consideration includes stakeholders such as government officials at all levels — local, state, and federal — and their potential support or opposition, which is an essential factor in program success or failure.

Equity

Policies will be evaluated by the broadness of their socioeconomic reach with the goal of having an impact on the highest possible number of children.

Cost

During the current fiscal crisis it is vital that policies be evaluated on the basis of cost. However, due to the potential for costs to become extremely high when obesity poses serious long-term health threats, costs for preventative policies should be considered in terms of what the eventual cost would be if policies are not enacted now. Therefore this criterion will consider both the short-term costs of implementation and the long-term financial benefits both for individuals and the nation as a whole.

Analyzing Federal Interventions to Increase Physical Activity

Each of the policy options specified will be evaluated on the criteria established in this paper. The purpose is to shed light on the challenges public officials face when attempting to change lifestyle habits in children.

Mandate Physical Education in Schools

A nationally mandated physical education program in public schools would reach 56 million children. Ensuring that children participate in physical education that meets the NASPE guidelines – 150 minutes for elementary school children and 225 minutes for middle and high school students per week for the entire school year – will directly result in additional minutes of moderate to vigorous physical activity for children and adolescents (NASPE and AHA 2010). Based on these figures it would appear that this is an extremely effective policy option; however, there is only small amount of evidence that shows a direct correlation between physical education in schools and a reduction in BMI. One promising but limited study measured the effect of increased hours of physical education on BMI among kindergartners. Results showed that "expanding existing PE instruction time nationwide so that every kindergartner gets at least 5 hours of physical education instruction per week…could decrease the prevalence of overweight among girls by 4.2 percentage points and the prevalence of children who are at risk for overweight by 9.2 percentage points" (Datar and Sturm 2004, 1504). This is encouraging, but the effectiveness is questionable until there are more controlled studies measuring the effects of NASPE guidelines on BMI in older school-aged children, and if there are any lasting improvements.

Although 48 states currently have some form of mandatory physical education, this policy option would require coordination from the Department of Education to standardize physical education across all states, leading to poor administrative feasibility. An administrative entity within the department, along with coordinators at the state level, would be responsible for organizing the implementation, training, and measurement of program effectiveness. Transitioning to a nationally administered program would also require congressional legislation and a great deal of planning, personnel, and time. For these reasons, this policy option is rated low on administrative feasibility.

Furthermore, support for federal intervention in state issues is extremely difficult, as was demonstrated by the recent congressional battle over health care reform. Current trends in education reform have taken a very academic results-driven approach, which does not include the consideration of physical education. For instance, as of 2007 "44% of all districts had increased time for [English Language Arts] and/or math while also cutting time for elementary school science, social studies, art and music, physical education, lunch or recess" (McMurrer 2008). In contrast, 95 percent of parents with children under the age of 18 think physical education is necessary for all students in grades K–12 (ACS, ADA, and AHA, n.d.). Citizens and advocacy groups would need to set the policy agenda for holistic education in order for this policy option to gain political support.

In terms of equity, this policy option will reach every child and adolescent enrolled in public school and ensure that all children are provided with high quality physical education no matter their socioeconomic status. In order to ensure equitable program implementation across all states, however, funding must be equitably distributed from the federal level. Determining the amount of federal funding each state receives will be a critical aspect of ensuring equity. Doing so will come with its own set of equity issues between wealthier and less affluent states.

The most equitable and effective policies are often the most costly. Mandating physical education at the national level will take a great deal of budgetary support; exact numbers are unavailable. As a result of the poor economy, many states face cutting extracurricular school programs (Milbourn 2010). Funding for this policy option will need to come from the federal level, and it is unlikely enough money will be available. The only current

federal funding for physical education comes from the Carol M. White Physical Education Program (PEP Grants), which in 2010 amounted to a meager $80 million (Popke 2010). Additionally, because there have been few studies about the impact of physical activity and physical education interventions in schools, there is currently no evidence that benefits will outweigh future health care costs. An evaluation of this policy option shows the pervasive barriers that result when our government imposes blanket forms of policy interventions, and sometimes rightly so.

Reinstate Public Awareness Campaign VERB

This public awareness campaign had a very high level of recognition by tweens; however, the impact of the campaign on increasing physical activity is debatable, and there is no data available on how the campaign decreases BMI, our main measure for effectiveness. A case study on the campaign using a randomized phone survey found that the "VERB campaign resulted in 34% more free-time physical activity among the VERB aware vs. the VERB unaware" (NSMC 2010). Despite this positive result, it was measured by phone survey and took respondents at their word. It is possible that many of the respondents answered according to researcher's expectations and answered yes when asked if they participated in physical activity during the past week. Nonetheless, awareness is crucial, especially among parents, who were a major secondary audience for the campaign. This case study measured parental awareness of VERB by the third year at 50 percent (NSMC 2010). Parental involvement plays a key role in reducing incidence of obesity in children and maintaining behavioral changes (Golan et al. 1998).

This campaign included many partnerships with private and nonprofit entities, which reduced the administrative burden of the CDC. Partnerships included: the National Institute of Health, Girl Scouts of the USA, 4H, state and city Boys & Girls Clubs, and corporate partners such as Disney (NSCMC 2010). Other than television advertising, which does not require extensive administration beyond campaign creation and market research, the partnerships assisted with community outreach and product distribution by giving out tool kits and branded merchandise.

This policy option has a relatively high level of political feasibility because it does not require major legislation from congressional decision makers other than appropriations to the CDC. This is similar to Michelle Obama's "Let's Move!" campaign, which encourages legislation but does not require it to increase awareness. If this program can be reinstated while measuring impact on BMI and keeping costs low, this campaign should gain substantial political support.

Although one of the goals of the campaign was to reach all socioeconomic levels as a means to achieve equity, the campaign's case study found that, "[p]rompted awareness [of VERB] did not differ by child's age, gender, or ethnicity but was associated with being from a middle- or high-income household, having a parent who was a college graduate, and being active on 7 or more days the previous week" (NSMC 2010). This finding questions the foundational basis of the campaign. Perhaps physically active children with proactive parents are more receptive to the message of the VERB campaign. If this is true, the campaign does not reach those most in need of physical activity awareness, but reinforces the message with those already engaging in healthy living. Unfortunately, this public awareness campaign did not meet the equity criteria because of its middle- to high-socioeconomic reach. Further investigation is necessary to identify public awareness campaign practices that have an impact across socioeconomic divides.

The final cost of VERB, funded primarily by the federal government, was $339 million over five years (NSMC 2010). The government benefited from in-kind

donations from media providers, which also kept costs low (DHHS 2006). Without a doubt, these costs are relatively low compared with the potential public medical costs of obesity.[1] Overall, public awareness campaigns are an impactful, useful, and low-cost tool for policymakers seeking to change lifestyle behaviors; however, they do not directly add moderate to vigorous physical activity in a child's day and potentially only reach families open to receiving the message.

Increase Federal Funding for Safe Routes to School Programs

The measured effectiveness of this policy option is very encouraging. On average, walking or riding a bike to school adds 20 of minutes of activity round trip to a child's day (McDonald 2007). Moreover, a study that measured the impact of active transportation to school on BMI found measurably lower BMIs in fourth grade boys who actively commuted to school than those who did not, and generally children who actively commuted were less overweight (Rosenberg et al. 2006). This policy option alone does not fully meet the NASPE-recommended 60 minutes of physical activity, but it does significantly contribute. Additionally, adding sidewalks and increasing safety for children walking to school is one of the first steps in improving a community's built environment. As such, Safe Routes to School can serve as the beginning of a larger dialogue about healthy living through increased awareness of a community's physical environment.

There are numerous resources available to communities interested in implementing Safe Routes to School, which leads to a promising level of administrative feasibility. Firstly, the Safe Routes to School National Partnership is an organization of 400 schools, nonprofits, and government agencies organized to effectively monitor, promote, and implement Safe Routes to School (Safe Routes to School National Partnership 2009). Additionally, the National Center for Safe Routes to School, which is funded by the Department of Transportation (DOT), offers training courses for teachers and community planners. Funding is provided by the DOT to state transportation departments, and is often met by additional state funding. The administration of Safe Routes to School is primarily conducted on a local level, and includes the building of local infrastructure. The policy's high level of administrative feasibility is reflected in its implementation in communities across all states.

There has been a large amount of support for Safe Routes to School from communities, state officials, and members of Congress. This support was made visible by the passage of the 2005 transportation bill that created the funding for Safe Routes to School. Since the initial funding ended in 2009, Congress has continued to support Safe Routes to School, though on a smaller level (CDC 2009b). There are concerns, however, that the discretionary spending cuts currently occurring in Congress may lead to reduced political feasibility for this program.

In order to promote equity, Safe Routes To School can and should be implemented in various types of communities, though it is not logistically feasible in rural communities. Successful programs include Kawana Elementary School in Santa Rosa, California, which serves a mostly Latino population. This program received $611,700 in funding to create new sidewalks, improve crosswalks, and create pathways (Safe Routes to School National Partnership 2009). An additional program is occurring in Spencer, Iowa, where the community recently received $134,880 in federal grant money (Licht 2011). The community is 96.6 percent Caucasian, with 7.3 percent of families living at or below the poverty line (US Census Bureau 2000). There is a need for better-built environments in both urban and suburban areas, and this policy option allows communities to tailor their approaches through the use

of federal funds. Creating more funding for Safe Routes To School will ensure that children of varying demographic backgrounds will continue to be reached.

Finally, the upfront cost of this policy option is low when long term costs of care for overweight and obese health issues are factored into the equation. Additionally, the original legislation stipulated that 70 to 90 percent of funding be used for infrastructure creation, which provides an economic benefit to communities by way of jobs (Safe Routes to School National Partnership 2009). Costs are also shared by federal and state governments, reducing the overall burden. Overall, this policy option is rated high because it contains the potential for strong administrative feasibility and equitable reach while effectively adding physical activity into a child's day without major cost burdens and disruptions to educational standards.

Weighing the Results

The evaluation of these three policy options explores the relative viability of different levels of federal intervention. When the costs to society are great, as this epidemic is already proving to be, it is critical to consider the extent to which the federal government, rather than state governments, should act. Unfortunately, communities lack incentives to spend in the short-term in order to lower costs in the long-term. This is especially true when the long-term costs of health care are left to society as a whole, by way of the federal government. This evaluation concludes that the highest degree of federal intervention, mandating physical education quality and quantity, is extremely unfeasible. Additionally, this analysis shows that the process of adding time to a child's day for physical education and physical activity is especially difficult. A public awareness campaign is a more feasible option in terms of cost, administration, and politics, but the audience shown to be receptive to the message is somewhat self-selecting. Additionally, quantifying and measuring the results, such as actual decreases in BMI, is challenging.

Federally-funded changes to the built environment through programs such as Safe Routes to School integrate community education, involve stakeholders, and create concrete and integrated changes to a child's day. Just as increasing physical activity levels alone will not decrease incidence rates of overweight and obese children, policies that include only federal mandates or only funds cannot address the full scope of the problem. Safe Routes to School is effective because it has the backing of the Department of Transportation, informational resources from the National Center for Safe Routes to School, and allows communities to use funds in a tailored fashion. An additional benefit of the policy is its ability to involve multiple community stakeholders in the process. From state and local representatives to schools, law enforcement, and parents, physical activity awareness levels can increase across the board.

The issue of childhood obesity is a useful vantage point from which to examine the role of federal government interventions in lifestyle choices. Safe Routes to School's favorable outcome in this analysis demonstrates the benefits of federal interventions that can be tailored to community specifics while reaching for national goals. Although many on the state level understand the need for healthy lifestyles, they do not have inducements to make potentially costly changes at the expense of other federal requirements. By incentivizing local governments through funding grants, the federal government can effectively pursue policy objectives that states are unwilling or unable to pursue on their own. Much like the promise of dessert in return for vegetable consumption, if implemented, Safe Routes to School provides more benefits than just increased physical activity, including greener communities, increased jobs, and cohesion-building community dialogue.

Safe Routes to School has already

enjoyed a high level of success in communities across the country, but with funding levels at only $183 million, much more can be done. For example, Safe Routes to School could become a stronger and more far-reaching program if the "Let's Move!" campaign adopted Safe Routes to School as one of its "Increasing Physical Activity" initiatives (DOT 2009). Implementing Safe Routes to School will not fix the obesity epidemic among our nation's youth; it is one component of what is truly needed. Only a holistic approach, which includes physical education in schools, healthy eating, and parental involvement, will effectively combat this growing trend.

References

Ad Council. 2011. "New Public Service Ads Launch to coincide with One Year Anniversary of First Lady Michelle Obama's Let's Move! Initiative to Combat Child-hood Obesity." Press release, February 9. http://www.adcouncil.org/newsDetail.aspx?id=368.

ACS, ADA, and AHA (American Cancer Society, American Diabetes Association, and American Heart Association on Physical Education). n.d. "Physical Education in Schools – Both Quality and Quantity are Important." http://www.everydaychoices.org/082008/PE%20in%20Schools%20Statement%20ACS%20ADA%20AHA%205.27.08%20_final_.pdf.

California Endowment. 2007. "Failing Fitness: Physical Activity and Physical Education in Schools."*Activity Matters for California Kids® Policy Brief*, January. http://www.sfgov3.org/Modules/ShowDocument.aspx?documentid=325.

CDC Foundation. 2003. "VERB Campaign Gets Kids Off the Couch, Into Action." *Frontline Newsletter* (Summer).

CDC (Centers for Disease Control and Prevention). 2005. "Barriers to Children Walking to or from School." *Morbidity and Mortality Weekly Report*, September 30. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5438a2.htm.

———. 2006. National Center for Health Statistics. "Obesity Still a Major Problem." April 14. http://www.cdc.gov/nchs/pressroom/06facts/obesity03_04.htm

———. 2009a. "Study Estimates Medical Cost of Obesity May Be As High as $147 Billion Annually." Press release, July 27. http://www.cdc.gov/media/pressrel/2009/r090727.htm.

———. 2009b. "Economic Consequences." Last modified August 19. http://www.cdc.gov/obesity/causes/economics.html.

———. 2010a. National Center for Chronic Disease Prevention and Health Promotion. "Health Topics: Childhood Obesity." Last modified June 03. http://www.cdc.gov/healthyyouth/obesity/index.htm.

———. 2010b. "Youth Risk Behavior Surveillance – United States, 2009." Surveillance Summaries, 2010. Morbidity and Mortality Weekly Report 59(SS–5). http://www.cdc.gov/mmwr/pdf/ss/ss5905.pdf.

———. 2010c. "Strategies to Improve the Quality of Physical Education." http://cdc.gov/healthyyouth/physicalactivity/pdf/quality_pe.pdf.

———. 2011a. "About BMI for Children and Teens." Last modified February 15. http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html.
———. 2011b. "Body Mass Index." Last modified February 15. http://www.cdc. gov/healthyweight/assessing/bmi/.
Chomitz, Virginia R., Meghan M. Slining, Robert J. McGowan, Suzanne E. Mitchell, Glen F. Dawson, and Karen A. Hacker. 2009. "Is There a Relationship Between Physical Fitness and Academic Achievement? Positive Results From Public School Children in the Northeastern United States." *Journal of School Health* 79(1):30–37.
Datar, Ashlesha and Roland Sturm. 2004. "Physical Education in Elementary School and Body Mass Index: Evidence from the Early Childhood Longitudinal Study." *American Journal of Public Health* 94(9): 1501–1506.
DHHS (Department of Health and Human Services). 2006. J*ustification of Estimates for Appropriations Committee for the CDC*. http://www.cdc.gov/fmo/topic/Budget%20Information/appropriations_budget_form_pdf/FY06CJ.pdf.
———. 2011. Center for Medicare and Medicaid Services. "National Health Expenditure Projections 2009–2019." https://www.cms.gov/NationalHealthExpendData/downloads/proj2009.pdf.
DOT (Department of Transportation). 2009. "New report shows Safe Routes to School Initiatives Succeeding." December 17. http://fastlane.dot.gov/2009/12/new-report-points-the-way-to-safe-routes-to-school.html.
Doheny, Kathleen. 2005. "'No Child Left Behind,' But Physical Activity May Suffer." Health Day News, June 5. http://sexualhealth.e-healthsource com/?p=news1&id=525549.
Donnelly, Joseph E., Jerry L. Greene, Cheryl A. Gibson, Bryan K. Smith, Richard A. Washburn, Debra K. Sullivan, Katrina DuBose, Matthew S. Mayo, Kristin H. Schmelzle, Joseph J. Ryan, Dennis J. Jacobsen, and Shannon L. Williams. 2009. "Physical Activity Across the Curriculum (PAAC): A randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children." *Preventative Medicine* 49: 336–341.
Ebbeling, Cara B., Dorota B. Pawlak, and David S. Ludwig. 2009. "Childhood obesity: public-health crisis, common sense cure." *The Lancet* 360: 473–482.
Finkelstein, Eric A., Justin G. Trogdon, Joel W. Cohen, and William Dietz. 2009. "Annual Medical Spending Attributable To Obesity: Payer and Service-Specific Estimates." *Health Affairs* 28(5): w822–w831. http://content.healthaffairs.org/content/28/5/w822.full.pdf+html.
Florida Prevention Research Center. 2007. "Partnership for a Fit KY / KY Department for Public Health." Accessed March 25, 2011. http://www.fitky.org/Default.aspx?id=25.
Golan, Moria, Abraham Weizman, Alan Apter, and Menahem Fainaru. 1998. "Parents as the exclusive agents of change in the treatment of childhood obesity." *American Journal of Clinical Nutrition* 67: 1130–1135.
Gortmaker, Steven L., Aviva Must, Arthur M. Sobol, Karen Peterson, Graham A. Colditz, and William H. Dietz. 1996. "Television Viewing as a Cause of Increasing Obesity Among Children in the United States, 1986–1990." *Archives of Pediatric and Adolescent Medicine* 150: 356–362.
Haas, Jennifer S., Lisa B. Lee, Celia P. Kaplan, Dean Sonneborn, Kathryn A. Phillips, and Su-Ying Liang. 2003. "The Association of Race, Socioeconomic Status, and Health Insurance Status with the Prevalence of Overweight Among Children

and Adolescents." *American Journal of Public Health* 92: 2105–2110.
Licht, Gabe. 2011. "Safe Routes to School progressing." *The Daily Reporter* (Spencer, IA), January 15. http://www.spencerdailyreporter.com/story/1695325.html.
McDonald, Noreen C. 2007. "Active Transportation to School: Trends Among U.S. Schoolchildren, 1969–2001." *American Journal of Preventive Medicine* 32(6): 509–516.
McMurrer, Jennifer. 2008. "Instructional Time in Elementary Schools: A Closer Look at Changes for Specific Subjects." *Center on Education Policy*. http://www.cep-dc.org/cfcontent_file.cfm?Attachment=McMurrer%5FReport%5FInstructionalTime%5F022008%2Epdf.
Menschik, David, Saifuddin Ahmed, Miriam H. Alexander, and Robert W. Blum. 2008. "Adolescent Physical Acivities and Predictors of Young Adult Weight." *Archives of Pediatric & Adolescent Medicine* 162(1): 29–33.
Milbourn, Todd. 2010. "Eugene schools may cut funds for P.E." KVAL News, April 14. http://www.kval.com/news/local/90891784.html.
Nader, Philip R., Robert H. Bradley, Renate M. Houts, Susan L. McRitchie, and Marion O'Brien. 2008. "Moderate-to-Vigorous Physical Activity From Ages 9 to 15 Years." The *Journal of the American Medical Association* 300(3): 295–305.
NASPE and AHA (National Association for Sport and Physical Education and American Heart Association). 2010. *2010 Shape of the Nation Report: Status of Physical Education in the USA*. Reston, VA: National Association for Sport and Physical Education. http://www.aahperd.org/naspe/publications/upload/shape-of-the-tion-revised2pdf.pdf.
National Center for Safe Routes to School. 2010. "Funding." Accessed February 13. http://www.saferoutesinfo.org/legislation_funding/.
NSMC (National Social Marketing Centre). n.d. "VERB Campaign Case Study." Accessed February 13. 2010. http://thensmc.com/resources/showcase/search-case-studies.html?view=single&section=project_overview&id=101.
NCSL (National Conference of State Legislatures). 2005. "Physical Education and Physical Activity for Children." Last modified December 2005. http://www.ncsl.org/Default.aspx?TabId=14027.
Ogden, Cynthia L., Margaret D. Carroll, Lester R. Curtin, Molly M. Lamb, and Katherine M. Flegal. 2010. "Prevalence of High Body Mass Index in US Children and Adolescents, 2007–2008." *Journal of the American Medical Association* 303(3): 242–249.
Olshansky, S. Jay, Douglas J. Passaro, Ronald C. Hershow, Jennifer Layden, Bruce A. Carnes, Jacob Brody, Leonard Hayflick, Robert N. Butler, David B. Allison, and David S. Ludwig. 2005. "A Potential Decline in Life Expectancy in the United States in the 21st Century." *New England Journal of Medicine* 352(11): 1138–45.
Popke, Michael. 2010. "Department of Education Awards $80M in PEP Grants." *Athletic Business*, October 4. http://athleticbusiness.com/editors/blog/default.aspx?id=276.
Rampersaud, Gail C., Mark A. Pereira, Beverly L. Girard, Judi Adams, and Jordan D. Metzl. 2005. "Breakfast Habits, Nutritional Status, Body Weight, and Academic Performance in Children and Adolescents." *Journal of the American Dietetic Association* 105: 743–760.
Rosenberg, Dori E., James F. Sallis, Terry L. Conway, Kelli L. Cain, and Thomas L. McKenzie. 2006. "Active Transportation to School Over 2 Years in Relation to Weight Status and Physical Activity." *Obesity* 14(10): 1771–1776.

Safe Routes to School National Partnership. 2009. S*afe Routes to School Putting Traffic Safety First: How Safe Routes to School Initiatives Protect Children Walking and Biking*. http://saferoutespartnership.org/media/file/Safety_report_final.pdf.

Sallis, James F. and Karen Glanz. 2006. "The Role of Built Environments in Physical Activity, Eating, and Obesity in Childhood." *The Future of Children* 16(1): 89–108.

Strong, William B., Robert M. Malina, Cameron J. R. Blimkie, Stephen R. Daniels, Rodney K. Dishman, Bernard Gutin, Albert C. Hergenroeder, Aviva Must, Patricia A. Nixon, James M. Pivarnik, Thomas Rowland, Stewart Trost, and François Trudeau. 2005. "Evidence Based Physical Activity for School-Age Youth." *Journal of Pediatrics* 146(6): 732–737.

The White House. 2010. Office of the First Lady. "First Lady Michelle Obama Launch es Let's Move: America's Move to Raise a Healthier Generation of Kids." February 9. http://www.whitehouse.gov/the-press-office/first-lady-michelle-obama-launches-lets-move-americas-move-raise-a-healthier-genera.

Trasande, Leonardo, Chris Cronk, Maureen Durkin, Marianne Weiss, Dale Schoeller, Elizabeth Gall, Jeanne Hewitt, Aaron Carrell, Philip Landrigan, and Matthew Gillman. 2009. "Environment and Obesity in the National Children's Study." *Environmental Health Perspectives* 117(2): 159–166.

Tremblay, Mark S., J. Wyatt Inman, and J. Douglas Willms. 2000. "The Relationship between Physical Activity, Self-Esteem, and Academic Achievement in 12-Year-Old Children." *Pediatric Exercise Science* 12: 312–323.

United States Census Bureau. 2010. "Back to School: 2010–2011." June 15. http://www.census.gov/newsroom/releases/pdf/cb10ff-14_school.pdf.

United States Census Bureau. 2000. "Profile of General Demographic Characteristics: 2000. Spencer, Iowa." http://censtats.census.gov/data/IA/1601974280.pdf.

USDA (United States Department of Agriculture, Food and Nutrition Service). 2010. "Healthy Incentives Pilot (HIP)." Last modified December 14, 2010. http://www.fns.usda.gov/snap/HIP/default.htm.

Whitaker, Robert C., Jeffrey A. Wright, Margaret S. Pepe, Kristy D. Seidel, and William H. Dietz. 1997. "Predicting Obesity in Young Adulthood from Childhood and Parental Obesity." *The New England Journal of Medicine* 337(13): 869–873.

White House Task Force on Childhood Obesity. 2010. *Solving the Problem of Childhood Obesity Within a Generation*. http://www.letsmove.gov/pdf/TaskForce_on_Childhood_Obesity_May2010_FullReport.pdf.

Wang, Youfa and Qi Zhang. 2006. "Are American children and adolescents of low socioeconomic status at increased risk of obesity? Changes in the association between overweight and family income between 1971 and 2002." *American Journal of Clinical Nutrition* 84(4): 707–716.

Notes:

1. For instance, according to the CDC, the total health care costs for obesity related illnesses from both Medicare and Medicaid, for just the state of California, were an estimated $7.7 billion (CDC 2009b).

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