Addressing Obesity in Alabama:
A proposal for physical education policy

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Contents

1 Executive summary 2
2 Nature of problem 3
3 Possible solutions, evaluated by prevention levels 4
4 Projected outcomes 6
5 Policy proposal and strategies for adoption and implementation 6
6 Proposed measures for future evaluation 8
7 Conclusion 9
References 10
1 Executive summary

Childhood obesity is an urgent and alarming health and social problem in Alabama. Alabama has the third-highest obesity rate among high-school students nationwide, with healthcare costs attributable thereto costing the state an estimated $2.4 million in the year 2013 alone.

According to the United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), physical education (PE) can contribute to the aggregate physical activity necessary for youth to maintain healthy lifestyles. Studies show that PE or participation in organized sports correlates with a reduction in weight or maintenance of a healthy weight, and given this we encourage you to support Alabama’s school districts in providing 225 minutes per week of physical activity for students. This will be a significant step toward Alabama’s achieving the CDC’s recommendation of 60 minutes of physical activity per day. To increase lifelong participation and positive policy reception, we also encourage a policy in which students may meet a portion of the mandated time in such extracurricular activities as team sports, yoga, or dance as approved by the state education board, provided that the given activity raises heart rates to a minimum of 50–70% of a student’s maximum heart rate.

We urge a policy in which students must complete these hours in order to graduate from high school, with exemptions allowed only when deemed medically necessary by a student’s healthcare provider. Doing so will ensure that our youth stay active, which is elemental to improving strength and endurance, building healthy bones, controlling weight, increasing self-esteem, and improving blood pressure and cholesterol levels. The education component is essential to having our students understand the rationale of healthy lifestyles and physical activity, thereby promoting their lifelong import. We believe state boards should enforce such requirements. Student assessment could include a combination of class participation, duration of moderate to vigorous physical activity, effort, improvement, and basic competency exams on health, physical fitness, and nutrition.

The implementation cost for this program is minimal. Federal need-based funds exist to support states with such requirements, minimizing tax burdens in Alabama and saving healthcare tax and citizens’ personal dollars over time. States such as Oklahoma have further incentivized participation by increasing funding for schools with better outcomes and participation. A program as simple and negligible in cost as awarding “Gold Star” recognition to schools with better outcomes has been shown by the CDC to improve student academic performance and to increase incentivized funding from the federal government to our schools. Parent Teacher Associations, school boards, school staff and student collaboration with local organizations can further cut costs while increasing student interest and participation. With the help of informed school nurses educating students, administrators, and communities we are confident that communities will understand the role they have and will embrace such efforts to curb the insidiously detrimental effects of obesity in Alabama.

The expected outcome of this policy is that students will be more physically active, in resonance with the recommendations of the CDC, the National Association for Sport and Physical Education, and the American Heart Association (NASPE & AHA, n.d.). Research shows that health and academic performance will improve, and rates of obesity and healthcare expenditure will decrease (Telford et al., 2012).
Obesity is a significant public health issue in Alabama: An alarming 69% of adults and 31% of adolescents are overweight or obese (Figure 1) (CDC, 2012), and Alabama ranks third in high-school obesity nationwide (The Trust for America’s Health & The Robert Wood Johnson Foundation, n.d.). The cause of obesity in Alabama is complex, though a notable contributing factor is a lack of physical activity. It is well-established that an individual’s level of physical activity and dietary and exercise habits in childhood and adolescence very strongly correlate with lifelong weight, lifestyle habits, and general health status (Kelsey, Zaepfel, Bjornstad, & Nadeau, 2014). However, Alabama schoolchildren are engaged in too little physical activity and the State of Alabama does not have any laws mandating a minimum amount of time for PE in its high schools (NASPE & AHA, n.d.). While many schools in Alabama do offer their students PE the standards are not uniform and schools often withhold physical activity as a disciplinary measure (NASPE & AHA, n.d.), indicative of a mindset that equates physical activity with a negotiable privilege instead of as a fundamental component of education as it should be. Additionally, students are often permitted to opt out of PE for activities such as band and Junior Reserves Officer Training Corps (Morton, J. B., 2009). While such activities may indeed involve some element of movement they are neither standardized nor do they promote education on physicality and health as core principles. Certainly no singular policy can address the inadequate physical activity among Alabama’s youth, but mandating and standardizing PE requirements in schools across the state is a good, and likely effective, step towards that goal.

It is important further to consider environmental factors that may contribute to overall attitudes of Alabamians on physical activity and therefore to their willingness to incorporate activity into their daily lives. Alabama is a largely rural state with few urban centers (USDA ERS, 2015). Only 37% of Alabama’s youth have access to parks, recreation centers, and sidewalks in their communities (CDC, 2012). Additionally, Alabama’s climate is such that excessively cold winters and hot summers render outdoor activity eminently unpleasant for large portions of the year (Evans, 1999). These factors, while not causative, may contribute to cultures and communities that do not place large value on physical activity.

Economic factors may also contribute to the paucity of resources available to hire teachers and to provide the necessary resources in order to allow for PE in high schools. In 2014 Alabama’s per capita GDP was $37,493, ranking Alabama 47th in the nation (USDC BEA, 2015), and Alabama’s budget deficit was an $265 million — unexceptional for the state — indicative of Alabama’s perennial fiscal shortcomings.
Substantively increasing physical activity among high-school students will require a multifaceted approach. While increasing PE requirements for high-school students will not alone address this issue it should be considered in earnest an achievable element of the solution. Though much needs to be done to address the social determinants of health and obesity as well, we propose to start with education, as school is a constant part of every community for all children. It provides the opportunity to reach Alabama’s youth en masse together with being a good setting for teaching lifelong skills.

3 Possible solutions, evaluated by prevention levels

We considered several policy options that may positively address childhood obesity in Alabama and evaluated each based on the five criteria of relevance, progress, efficiency, effectiveness, and impact (Collins, 2005).

Encourage physical activity outside of school and more personalized to students’ individual needs. This policy option seeks to encourage individualized physical activity outside of class, clearly placing accountability on the individual and promoting long-term efficacy through his or her motivation to be active and involved. Community education could be enhanced through increasing the number of licensed physical educators to direct extracurricular activities. Schools can collaborate with other organizations to create networks that provide physical activity programs and facilities outside of school. On an organizational level, this policy would require significant funding and resources. The Alabama State Department of Education could promote this policy by offering financial incentives to schools that choose to implement such extracurricular activity programs and possibly penalizing schools that do not. Although relevant and highly impactful, relying on this policy alone sans other mandates would be ineffective in achieving our desired outcomes. Because “personalized” could be interpreted broadly there may be accreditation of activities, such as knitting, whose contribution to reducing body-mass index (BMI) is dubious at best. Additionally, this policy warrants extensive collaboration with other schools as well as the changing of local infrastructures, which poses issues with efficiency due to the high costs required, the amount of coordination needed for such integration, and the necessary oversight of organizations outside of school boards’ hegemonies.

Provide more comprehensive health, nutrition, and physical education. A comprehensive health curriculum including health, nutrition, and PE is relevant in that it addresses healthy food choices, effects of balanced nutrition on the human body, and long-term effects of inactivity that result in poor health. The projected outcome of this policy is healthier food choices and healthier behaviors of high-school students who participate in the curriculum, which ultimately would influence families, neighbors, and the community.
at large. The initial expenditures would involve the integration of nutrition counseling and/or education into each grade level, while the policy ultimately aims for long-term positive health effects for the entire community. The comprehensive health curriculum could extensively impact the local population, with likely outcomes ranging from growth and development of high-school students’ nutritional knowledge to a decrease in obesity rate in the community. However, in regards to efficiency and effectiveness, the initial expenditure for nutrition counseling and/or education into each grade level is costly relative to short-term benefits foreseeable to the community and may compromise the hours allocated for actual physical activity. Through nutrition education may shape dietary preferences it might not be enough to encourage significant change, as parents are often the decision-makers of nutritional choices at home.

**Set mandatory minimum hours of physical activity during school.** Based on the five evaluation criteria, this policy of mandating an increase in time of physical activity within each Alabama school was deemed to be the strongest. This policy can be implemented through amendments to curriculum and graduation standards, and would not require legislative changes. Daily PE classes will be offered in order to encourage fitness and long-term interest and participation. According to the CDC, “requiring students to participate in quality physical education classes for specific time periods results in meaningful and consistent contributions to the total physical activity that young people need to enhance their health” (CDC, 2011). Though implementation will require initial outlays of funds and continual expenditures, most notably to keep PE educators on payroll, the state would ultimately save money in obesity-related healthcare expenditures. Considering that evidence shows that PE in high schools does significantly reduce BMI and that obese adults require an additional $3,500 each in healthcare costs on average per year (Cawley, Meyerhoefer, Biener, Hammer, & Wintfeld, 2015), the state of Alabama stands to save significant sums of money in the long-term from this investment. Incorporating coalition-based activities like morning exercise and running clubs would be very effective in reaching the policy’s increased activity requirement (CDC, 2011). Coalition groups including local supermarkets and sport facilities could create a network that introduces students to healthy food options, the benefits of exercising, and the specific resources available in the community (Lets Move!, n.d.).

Despite necessitating an increase in organizational funding to support PE specialists, equipment, and other essential costs, this implementation is feasible because it builds upon existing infrastructure and curriculum for the 40% of Alabama schools that already offer PE classes. Mandatory teacher/coach reportings of student activity and enforcement of these standards by the state school board should be driven by incentives that reward schools with the largest improvements in health outcomes — we recommend publishing annual “Gold Star” rankings. In addition, need-based grants should be available for financially challenged schools to enhance their PE performance, utilizing special grants from national organizations such as the CDC and USDA. This policy is capable of having a powerful impact on the health of Alabama’s students as well as the entire community. It has been demonstrated to be effective and efficient, since school-based physical education is effective in increasing levels of physical activity and improving physical fitness (CDC, 2011), and outcomes are capable of being quantified and assessed.
4 Projected outcomes

The three policy options we evaluated included the following: (1) encouragement of physical activity outside of PE and more personalized to students’ individual needs; (2) provision of comprehensive health, nutrition, and physical education; and (3) setting of mandatory minimum hours of physical activity during school. For option (1) the main outcome would be increased physical activity for students outside of the traditional PE setting, though this outcome also requires additional funding for such programs, as well as limits the participation ability of students with commitments outside of school, such as after school jobs. For option (2) the outcomes include nutritional knowledge and behavior changes around eating habits as well as physical activity. This outcome is limited by intra-school resources, as well as resources within the homes of students, as there is overwhelming evidence that childrens’ diets are largely determined by the dietary habits and constraints of their parents. Predicting the outcome of option (3) is more straightforward as it requires an increased number of hours of physical activity in a traditional PE setting, namely, that students complete more physical activity in school, and that tangible health benefits will follow. The limitation of this option is the variance in intensity of physical activity, which may not be sufficient to have positive influence on the future health outcomes of students.

5 Policy proposal and strategies for adoption and implementation

Of the aforementioned policy options we elected to propose option (3), setting of mandatory minimum hours of physical activity during school. Studies show that there is a correlation between PE or participation in organized sports, and either a reduction in weight or maintenance of a healthy weight (CDC, 2011). The Alabama school districts will provide 225 minutes per week of physical activity for students, in congruence with the national recommendation for students to participate in 60 minutes of PE per day. This may be accomplished by curricular amendments made by the Alabama State School Board, which creates curriculum standards. A minimum 180 minutes will be spent on physical activity itself in accordance with such well-reputed standards as the Colorado Education Initiative that are specific to high-school students. The remaining 45 minutes may be completed outside of school as outlined below. Additionally, students may complete some or all of the required minutes via any of the following alternatives: students may log minutes in school sports teams if approved by the relevant coach or may likewise log minutes by participating in approved physical activities outside of school. A longer mandatory minimum was considered but 225 minutes was ultimately decided on for its feasibility for school scheduling to accommodate (it divides conveniently into 45 minutes five days per week or 75 minutes three days) while still affording students ample time to be active.

Students must complete these hours in order to pass PE, PE will be graded (not pass-fail) based on attendance and participation, and passage of PE will be requisite for graduation. A healthcare provider unrelated to the student must provide a letter with his or her stamp on official letterhead in order for student to be exempt from this requirement for a medical reason. In terms of the stated policy goal of strengthening individual skills, regular physical
activity “improves strength and endurance, helps build healthy bones and muscles, helps control weight, reduces anxiety and stress, increases self-esteem, and may improve blood pressure and cholesterol levels”, and stressing such rationale to students as they participate in physical activity will ensure that their knowledge of the importance of physicality and regular activity and its contribution to success in other areas of their life, such as academics, is strengthened as well (CDC, 2015a).

Another aim of this mandate is to increase overall attitudes and community engagement in physical activity. Schools will be responsible for educating the faculty and parents that this mandate is not meant to detract from a focus on didactic coursework, but rather that physical activity indeed boosts academic performance (Cawley, Frisvold, & Meyerhoefer, 2013). As part of the mandate, school districts will make positive improvements in their community to foster physical activity. Schools that show improvement in student BMI scores (a proxy for overall health and weight status) from year to year will receive a “gold star” on an annually published roll to indicate their success in promoting health and fostering effective PE programs. Granting such tokens of recognition to successful schools will allow for further recognition of achievements without exceeding the budget for this proposal. Overall, the proposal will strive to change the attitudes around the importance of physical activity in the school and the community.

Additionally, this proposal mandates training, education, and support for school health providers in identifying and managing childhood obesity. Specifically, resources should be allocated to develop a training workshop for school nurses to be implemented statewide as part of paid staff/faculty professional development already extant in public schools. These trainings should not only teach obesity prevention and wellness promotion skills, but should also stress the vital importance of the school nurse role and reinforce the school community’s commitment to wellness. This will strengthen nurses’ and administrators’ commitment to promoting wellness, will ensure consistency of care in Alabama schools, and will create a framework for developing clear protocols to address obesity and to promote health in schools. Such trainings should help teachers to understand the vital importance of physical activity and emphasize that this program will help students to succeed academically by promoting wellness. Organizational practices also need to be reviewed in order to ensure that the such PE programs are actually effective. A broad base of existing evidence supports the role of PE completed by a trained PE specialist in improving future health outcomes. Therefore schools will need to structure their PE programs to ensure that physical activity is administered by a certified PE teacher (Telford et al., 2012).

All schools should have the mandates of proposal fully implemented within 2 years. It is important to establish systems of monitoring, evaluation and enforcement within the school system to ensure that the physical activity component of the PE program is effectively administered. Each school will collect data about the percentage of students engaging in the required amount of physical activity. The state will create a standardized system for data collection and processing to ensure accuracy and consistency throughout different districts.
6 Proposed measures for future evaluation

In order to measure the outcomes of the new mandate for increasing physical fitness we have proposed that schools submit several data metrics that will assist the state in assessing the effectiveness of the mandate. The school board will appoint a group — we recommend current employees to obviate the need for any additional staff — to compile this data for the state. As research has shown that the success of a program depends on the oversight and accountability of a school to the governing body the Alabama State Department of Education will also make biannual visits to schools to assess their compliance and implementation (McCullick et al., 2012).

A comprehensive review of policies and research regarding BMI screening in schools in the U.K. and U.S. was done which showed that BMIs can be a useful tool in evaluating the long-term impact of schools and its strategies in preventing obesity (Ikeda, Crawford, & Woodward-Lopez, 2006). Schools will be required to submit the BMI of all students at the 9th grade and 11th grade, which is consistent with the policies of other states’ boards of education (NASBE, n.d.). This will allow the state Board of Education to track obesity and the impact of this mandate on overall health over time of at no cost to the state since school nurses have been already trained to measure BMI and can easily incorporate regular student BMI assessments.

According to successful programs such as Coordinated Approach to Child Health, SPARK and the CDC, more important metrics come from other forms of data (Segal, 2009). Therefore, various validated questionnaires and evaluation tools will be utilized for evaluation of curricula and student perception of their physical activity and health behaviors. Using the CDC’s Physical Education Curriculum Analysis Tool (PECAT), schools will document their physical education curriculum as well as how they are meeting the mandate requirements such as time and trained personnel (CDC, 2014b). Schools will submit grades of students to the state appointed analysis committee. To ensure that the school system is engaging the community in this process, they will submit yearly documentation of an effort or initiate to involve the community in healthy behavior and increased physical activity. Finally, to assist schools in their appraisals once they have adopted the proposed mandate schools will be encouraged to submit the CDC’s School Health Index. This two-part index allows for self-assessment of programs in place and formulation of improvement actions based on self identified areas for improvement (CDC, 2014c). This tool will be vital for spontaneous innovation and collaboration between school systems. Collecting this information will allow for sound analysis of the mandate as well as recognition of areas in need of improvement. This comprehensive collection of data has shown to be successful in validating the success of physical education programs.
In sum, schools should be prepared to submit the following documentats to the Alabama State Board of Education at the end of each academic year:

- BMI of incoming 9th and 11th graders
- School assessment of physical education curricula using Physical Education Curriculum Analysis Tool (PECAT)
- Student self-assessment via the National Youth Risk Behavior Survey (YRBS) (CDC, 2015b)
- Physical education grades, being based on participation, not on performance
- Documentation of community education/involvement
- School Health Index (recommendation only)

We anticipate that the costs to districts of compiling these assessments will be negligible, as all are freely available public resources from the CDC. These assessments will be implemented in a similar timeframe as the rest of the proposal and it is at a school’s discretion as to how to implement them. However, the year that the mandate goes into full effect it will be required that these metrics will be submitted.

7 Conclusion

Overcoming childhood obesity in Alabama is an important step toward improving the health of the state as a whole. Healthier children grow up to be healthier adults, and the level of health of the people in a society has profound ramifications on the individual, local, and societal level. The school environment presents a unique milieu to address youth physical health and fitness. Alabama’s state government would be making a prudent investment in the current and future health of the state by passing legislation to increase the physical education mandate to require 225 minutes of physical education a week, of which at least 180 minutes must be vigorous physical activity, the balance allowing for didactic health education.

This legislation will have direct health benefits on students and it is the best way to support more active lifestyles and ensure that youth remain active as they become adults and well into the future. Research has demonstrated that supporting physical health and fitness can lead to improvements in students’ academic performance as well as to reductions in obesity and increased cardiovascular capacity — and ultimately to decreased healthcare expenditures. For its relatively minimal investment in implementation costs for this legislation the state will realize significant fiscal rewards in terms of improved student performances and decreased health expenditures, as well as the societal benefit of fostering health and wellness among the state’s youth. It is important that this legislation be passed and that schools be held accountable for enacting the relevant changes. Alabama’s students deserve to be healthy, and this legislation will help to get them there.
References


