Improving Massachusetts Policy for Physical Education

I. Executive Statement

According to the Center for Disease Control (CDC; 2014a), childhood obesity is on the rise in the state of Massachusetts (MA). Physical activity through increased physical education (PE) and activity during school can mitigate adverse health outcomes from obesity. Massachusetts PE policy lacks regulations enforcing time requirements and student participation in PE, and lacks other state policies, such as joint-use agreements, recess, and walking/biking to school, which affect physical activity (CDC, 2014b). Thus, 55.7% of high school students do not get 60 minutes of exercise on 5 days per week (CDC, 2013b). Further, 16.7% of students under 18 years old receive daily PE (CDC, 2014b). Additionally, decreased funding for PE and increased emphasis on math and science hinders physical activity during school (Institute of Medicine, 2013).

Mass in Motion, a Department of Public Health initiative, identifies the need to promote physical activity to prevent obesity and chronic disease. Mass in Motion fosters physical activity through improving safety and structural renovation of neighborhood parks, playgrounds, and sidewalks. Mass in Motion reports 84% of children are more active with access to playgrounds after school, and people are 47% more likely to be active in communities with sidewalks (Massachusetts Department of Public Health, 2015), which supports Mass in Motion’s goals to improve physical activity in the community. Unfortunately, Mass in Motion only provides funding for 18% of MA communities (Department of Public Health, 2015), lacks specific recommendations for PE in school, and must be statewide in order to facilitate opportunity and access for physical activity.

The state must facilitate the expansion of Mass in Motion’s success, and include policy which targets schools and PE to promote physical activity via regulations to enforce implementation and obtain funding. The policy will change organizational practices by establishing standards for boards of education (BOE) to implement regarding PE, while School Wellness Committees (SWC) keep local schools accountable for improving PE. The proposed policy also includes standardization of PE with the use of a curriculum, which will strengthen individual knowledge
and skills. The curriculum will also foster student motivation as PE teachers adopt new strategies. Schools can also support physical activity via classroom activity bursts. The CDC (2013a) suggests “physical activity breaks during standard classroom instruction,” or activity bursts, can enhance factors like attention and concentration, which may contribute to improved conduct in the classroom and test scores. During continuing education training for teachers, teachers will learn skills to implement classroom activity bursts and the use of a motivational framework to engage students. Finally, fostering coalitions and networks between Mass in Motion and school councils will promote the adoption of Mass in Motion, including PE requirements, in school districts throughout the state.

Evaluation will reflect statewide implementation of Mass in Motion and improved physical activity of students resulting from available funding and enforced regulations within two years. School districts will have required PE following a standard curriculum, classroom bursts, and committees which advocate for physical activity as evidenced by state audits. Overall health outcomes and long term evaluation of the policy through CDC Prevention Status Reports related to physical activity and obesity.

II. Background: Nature of Problem

According to the CDC (2013b), about 50% percent of high school students reported attending PE on 1 or more days in an average week. Only 44% percent of high school students reported they were physically active for a total of at least 60 minutes per day on 5 days a week (51% males 38% female) (CDC, 2013b). Middle school students showed similar trends with just under 50% of the students reporting they did not do any form of physical activity for at least 1 hour per day, at least 5 times per week.

While Massachusetts law states "physical education shall be taught as a required subject in all grades for all students in the public schools for the purpose of promoting the physical well-being of students," there is no required time children must participate in PE. (General Law 71.3). In 1996, Massachusetts removed the annual minimum of 60 hours of PE and delegated the decision
of required hours to regional or individual school committees due to the growing pressures of in-school learning and limited financial resources.

Major budget cuts have been largely responsible for the lack of emphasis on physical activity in schools. Budget cuts to schools were largely driven by a number of significant changes made to the state tax code beginning in 1998. These tax cuts cost roughly $3 billion annually, restricting the state's ability to fund essential services and placing a burden on schools (Wise & Rivera, 2015). Additionally, MA’s universal health care coverage, MassHealth is 37% of the yearly budget, drawing funds away from education (Mass Budget, 2014).

Lower budgets along with the No Child Left Behind Act, enacted in 2001, encouraged school officials to channel funds away from PE programs and pour resources into math and sciences. Current policy require 990 hours of structured learning time in physical and health education for high school students, in which participation in physical activity does not count. The state is criticized for putting too much emphasis on state standardized testing such as the Massachusetts Comprehensive Assessment System (MCAS), of which student success became the top in the U.S. reflected by both state and national tests. While the state is thriving in these areas, physical activity is not an included component and attention has shifted away from PE (Johnson, Oliff, & Williams, 2011).

III. Proposed Solutions and Supporting Evidence

Strengthening Individual Knowledge and Skills

Solution: Proper implementation and increased student motivation will be achieved by providing PE teachers with a well-structured, standardized curriculum and appropriate training.

Evidence: When PE teachers engage in friendly general communication, are task-oriented, promote cooperation and teamwork, and demonstrate awareness and caring conduct, students feel more motivated and have a greater sense of enjoyment and self-efficacy with regard to physical activity (Sparks et al., 2015). Restructuring the strategies for teacher-student interactions to include encouraging the use of non-controlling language, downplaying social
comparison and showing empathy will increase student engagement, satisfaction and motivation (Tessier, Sarrazin, & Ntoumanis, 2010).

**Promoting Community Education**

**Solution:** Teachers will act as role models of healthy living to increase physical activity of students.

**Evidence:** Community campaigns increase physical activity in adults and children (Zaza & Harris, 2005).

**Educating Providers**

**Solution:** Educate providers (school staff, teachers, nurses) on how to offer motivational framework for students and how to implement daily burst activities into classroom. Skills will be taught during continuing education training for teachers, which is already a requirement.

**Evidence:** Increased physical activity bursts have been shown to reduce BMI and increase time students spend in on-task behaviors (Active Living Research, 2013).

**Fostering Coalitions and Networks**

**Solution:** Create a coalition comprised of advanced practice health care practitioners, nutritionists, physical educators, members of the state’s health department, representatives from Mass in Motion, and members of the state’s education department in order to develop a PE requirement appropriate for school children, and collaborate with Mass in Motion to incorporate it into their requirements to receive funding.

**Evidence:** School councils are already mandated to exist in MA which contain the principal, parents, teachers, community members and students (Massachusetts Department of Elementary and Secondary Education, 1994). School councils promote discussion and action related to improving schools and outcomes for students.

**Changing Organizational Practices**
Solution: Create a SWC in each school under the supervision and direction of the BOE to assess and implement plans for daily PE, physical activities before and after school, and use of school facilities outside of school hours. This will increase physical activity and education as well as promote proper allocation and utilization of its funds.

Evidence: According to the CDC, 68.8% of states nationwide have one or more groups responsible for coordinating health related activities, and of these, 96.8% addressed PE or physical activity (CDC, 2012). By forming SWC supervised by the BOE in each school, PE is prioritized and appropriately regulated both at the school and state level.

Influencing Policy and Legislation

Solution: Implement a standardized curriculum and regulations on PE which meet CDC and National Association of Physical Sports and Education standards to provide students the opportunity to engage in recommended intensity and amount of exercise.

Evidence: Fitness testing shows improved overall fitness in Californian school-aged children since PE policy was introduced (California Department of Education, 2014). Students in SPARK programming are required to complete 30 minutes of physical activity 3 time per week and a 30-minute weekly classroom component of PE (Sallis et al., 1997). The rate of increase in obesity declined since implementation of the policy.

IV. Projected Outcomes

The implementation of the policy of increasing physical activity in the classroom and standardizing PE aims to increase the amount of time students spend per day being physically active by 50%. This will also result in a decrease in the average BMI of overweight school children and the number of overweight students from 25% to 20% over 10 years (Massachusetts Department of Public Health, 2015).

The BOE and SWC can identify solutions to change practices related to the unique problems with PE. Such solutions include increasing PE teacher knowledge and skills and improving
student motivation by standardizing a curriculum for PE classes. Over a 4 year period, projected outcomes include an 80% standardization of curriculum with a 50% standardization of methods of PE teachers. In terms of student participation, a 30% decrease in students “sitting out” during PE class and 10% increased participation in policy development at school district and community level by students.

Increasing physical activity in the classroom and facilitation by school-staff are also an instrumental part of the solution. The education and hands-on training of school staff to promote physical activity of students in general will contribute to 13% increase in play time spent at a moderate to vigorous physical activity level. The effect of promoting physical activity in the non-physical education classes will increase physical activity by at least five minutes per class, which will lead to a 50% increase in the number of regularly active participants (van Sluijs, McMinn, & Griffin, 2007). Burst exercises in the classroom is a non-physical education example which will also contribute to increased physical activity. At a six month evaluation after the implementation of daily burst activities in the classroom, the measurable amount of time spent in activity for all participating students will have increased by 30 minutes total per day.

By forming coalitions between Mass in Motion & school councils, we can expect an increase in physical activity as measured by an increase MCAS scores (Chomitz et al., 2009) the passing rate percentage will increase from 88% to 93% by 2020 (Salsburg, 2014).

As an alternative policy, there could be no action done and the current situation of physical activity in school children would continue to be the same or worsen. This would add to the current problem in MA of 16.4% obesity in 2-4 year olds of low income families, 14.5% obesity in 10-17 year olds, and 10.2% in high school students (Childhood Obesity, 2014). Another policy could be to implement just one of the policies suggested above, in which there would be some level of benefit but would not be as comprehensive as implementing all of the policies.

V. Proposed Strategies for Implementation/Adoption:

Strengthening individual knowledge and skills
To strengthen individual knowledge and skills, the SWC will increase PE teacher training to standardize a curriculum PE classes, which continues to emphasize Mass in Motion’s endorsing a stronger PE curriculum. Through training teachers and standardizing a curriculum, students will improve physically, cognitively, and affectively (Tessier et al., 2010). Through this policy, PE teachers will attend bi-yearly seminar trainings to successfully develop a standardized evidence-based curriculum. The SWC will monitor the policy through documenting the number of students attending and participating PE each week. Also, the schools’ budget funds will be shifted to allocate funds for trainings, because even a one-time training will have long-term effects. Over a 4-year implementation period, the SWC will monitor the policy through a student survey, an instructor survey, and the tallied Number of students “sitting out”, effort, motivation of students in PE class (Tessier et al., 2010).

**Promoting Community Education & Educating Providers**

The expansion of Mass in Motion will be implemented by targeting community members and providers, such as school staff, teachers and nurses, to promote childhood activity during the school day. The SWC will educate these key community members about creating time for physical activity breaks in the classroom and encourage adults to model good health practices for students. According to the CDC, involving teachers and other staff in modeling healthy behavior for students can lead to greater student participation in physical activity and an overall culture of wellness in schools (CDC, 2013a). Educating educators about this reality will provide teachers an incentive to conduct periodic exercise breaks throughout the day. Incorporating physical activity breaks during standard classroom instruction will require a minimal amount of time and resources, and is easily implemented. Normal school day hours will not require extension, thus minimizing adjustments to school day schedules, including class times, transportation, and before and after school activities.

Designating 5 minutes of class time for a guided wellness break can enhance attention and concentration during classroom time, as well as improve daily physical activity and education for both staff and students in a highly efficient and low cost manner. While some may argue this is taking away from necessary time spent on lecture and content review, the aforementioned benefits of burst activities will prove this is an equally valued investment as time spent on
academics. The objective to increase daily physical activity will be directly achieved from the intervention. Participating students will use entire allotted time doing physical activities guided by their teachers in the classroom. Including physical activity into the classroom reduces physical activity barriers prevalent in out-of-school environments, such as unsafe neighborhoods, limited green space, specific family conditions, etc.

**Fostering Coalitions and Networks**

Mass in Motion will provide Carol M. White grant funding to school districts for implementing the classroom physical activity bursts and to create a SWC. Currently, Mass in Motion provides grants to promote physical activity to only 65 out of 351 towns (or 18.5%) in MA (Massachusetts Department of Public Health, 2015). The coalition will develop and implement the classroom physical activity burst component to the Mass in Motion program. This would help regulate and promote the amount of guaranteed daily physical activity within the school day. Additionally, the SWC coalition will oversee the PE requirement, and will work with Mass in Motion to incorporate it into their requirements to receive funding while expanding the program to more communities. To do this, a large marketing campaign will be initiated involving social media, print media, and presence with communities. As a goal, Mass in Motion expansion to 35% (or about 181 municipalities) by 2020 and 75% (or about 398 municipalities) by 2030. By forming coalitions, 30% of school districts will manage grants and secure Carol M. White Physical Education Program (PEP) Grant funding to support and improve daily physical activity by 2020.

**Changing Organizational Practice**

The expansion of Mass in Motion will be implemented through the use of SWC mandated by local BOE. The purpose of the SWCs, which may exist at a the school or district level, is to ensure new exercise policies created through the expansion of Mass in Motion, such as classroom activity bursts or after-school expansion of gym time, are implemented properly. SWC will consist of key stakeholders, such as teachers, parents, educators, students, administrators, and other school staff, and will have the power to adjust and enforce policies in a manner appropriate to each school and student population (Alliance for a Healthier Generation, 2013).
**Influencing Policy and Legislation**

To implement proposed strategies for creating/enhancing PE programs, we must utilize SWC to determine the amount of PE needed to bring students maximal benefits and we also must create a standardized curriculum consistent with standards outlined by the CDC and National Association of Physical Sports and Education (Alliance for a Healthier Generation, 2013). Ultimately, oversight of the expansion of Mass in Motion and implementation of PE requirements should be done by the state government to ensure PE is standardized across MA.

**VI. Proposed Measures for Future Evaluation**

**Strengthening Individual Knowledge**

To evaluate the impact the policy has on strengthening individual knowledge and skills, school administrations can quantify how many PE teachers are trained in enhanced PE curriculum and how many students are attending PE class. Because enhanced PE curriculum has the potential to motivate more students to participate in PE, long term evaluation will assess how many students choose to sit out of PE class and how many chose to participate.

**Promoting Community Education & Educating Providers**

To evaluate implementation of classroom burst activities, we will encourage monthly supervision of teachers to ensure the enforcement of five minute activity bursts in the classroom and biannual BMI assessment of the students. In order to measure the additional benefits of increased physical activity in students, we will also do a biannual evaluation of test scores to assess increased learning. This will offer a comparative measure on the effectiveness of the enforced policy. Moreover, routine (biannual) tracking of teacher participation in mandated continuing education courses will further allow us to ensure the implementation of physical activity in an effective way.

**Changing Organizational Practices**

To evaluate the implementation of SWC, there will be an assessment of the percentage of schools which successfully created an SWC as part of their effort to secure funds from Mass in Motion. The efficacy of each SWC may be evaluated using the criteria outlined by Healthier
Generation’s SWC Toolkit (2013): vision, skills, incentives, resources and action plan. Each SWC should have created a goal or vision for the change they want to see in the school, evaluation of the skills present in the group, incentives that will increase participation, the resources available in the school, and an action plan for the completion of their vision. The successful implementation of these criteria will lead to successful change.

**Fostering Coalitions and Networks**

To evaluate the results from forming a coalition with Mass in Motion, we will quantify the number of towns receiving grants from Mass in Motion, as well as those adopting the PE requirement of having 60 minutes of activity per day. Currently, only 18.5% of municipalities in MA get grants from Mass in Motion (Massachusetts Department of Public Health). Since our goal is to expand this program to 35% of towns receiving grant money by 2020 and to 75% by 2030, we will track progress on quantifiable measures, such as the total number of towns receiving grants to fully establish and standardize the PE requirement, as well as the number of minutes of activity performed in the classroom, gym, and on the playground.

**Influencing Policy and Legislation**

To evaluate the overall policy of expanding Mass in Motion at the state level, there needs to be verification schools are following the newly implemented legislation. This will require superintendents to observe whether each school in their district have enacted the policy during their ongoing visits to the school and report their findings to the SWC (Massachusetts Department of Elementary and Secondary School, 2012). Reports can be made on a quarterly basis and follow-ups should be made with principals if certain schools have not adopted the policy. Furthermore, the standardization of PE across the state will promote physical activity and eventually decrease obesity. Therefore, to evaluate decrease in obesity, CDC data on BMI scores in MA can be compared to BMI scores before policy was enacted into state legislation. This can be done on a yearly basis. Both superintendent visits and comparative analysis of BMI scores allow for further evaluation that states are meeting policy guidelines.

**Long-term evaluation**
The purpose of this policy is to increase PE infrastructure and programming in schools statewide. Therefore, we will continue to analyze data sets which map the distribution of schools with Mass in Motion funding and are consistent with the guidelines necessary to receive the funding. We will also continue to compare data on youth and physical activity, specifically the Prevention Status Reports produced by the CDC (2014a), to track improvements in health outcomes.

VII. Conclusion and Discussion

In summary, the aforementioned lack of standardized physical activity requirements for school children is a barrier to potential academic achievement as well as physical health in MA. State policy standards which prioritized physical activity were removed two decades ago due to financial limitation. Since that time, new PE practices and programs have emerged in other states and in certain MA counties, proving it possible to implement physical activity standards in the current financial context. The success of existent programs in creating, funding, and evaluating physical activity demonstrates these programs are strong models. Therefore, new MA policies can be drafted and policies can be blended to support the wellbeing MA children.

The enactment of new policy, and its enforcement via regulations targets prevention of a worsening obesity epidemic and bolsters a solution of physical activity. The policy aims to incorporate and optimize many of the activities in which students of participate during the school day, and continue to buttress the education of students. The policy supports educators and school administration by creating clear guidelines, achievable expectations, and distributing the responsibility of maintaining physical activity. Similarly, federal funds and grants which supply Mass in Motion can be allocated to support these changes, while other actions, such as classroom activity bursts, cost nothing.

New legislation would include:

- State facilitation of Mass in Motion implementation throughout all counties of MA, including the changes which improve PE, and assisting in obtaining available funding.
• Legislation should include the standardization of PE, use of classroom activity bursts, before/after school programs which support student physical activity, and the formation of regulating bodies to assure the success of the new policy.
• Formation of coalitions between Mass in Motion, BOE, health and school experts, and the MA department of health will develop policy for the standardization of PE and evaluate the efficacy of these programs.
• School Wellness Committees, under the guise of the BOE, will assure the implementation and enforce the changes of the new PE policy.
• Community leaders and school teachers will be educated in standards and strategies for engaging students and increasing student enjoyment of physical activities.
• Physical activity bursts will be scheduled within the course of the school day to offer students a break from academic learning and an opportunity to engage in physical activity.

Without these policy changes, the detrimental effects of lack of physical activity, including obesity, will remain high. Money will need to be allocated to the management of chronic disease, which is more costly than prevention, and MassHealth will need to continue to rise and drain MA budget. And people will experience a poor quality of life.

But, with prioritizing prevention, and implementing new policy around PE, MA can reduce the risk of poor health outcomes and reduce medical costs, increase children’s opportunities and desire to engage in physical activity, and perpetuate healthy behaviors as an adult. Because children spend much of their childhood in schools, it is imperative the state support schools in targeting children’s physical activity during school hours. The policy not only considers the importance of PE, but also how the school can continue to facilitate physical activity of students. Extending Mass in Motion and implementing state policies which foster physical activity and PE in schools and communities can lower the rate of childhood obesity and increase the health and productivity of MA residents as a whole.
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