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The Massachusetts School-Based Body Mass Index Experiment —Gleaning Implementation Lessons for Future Childhood Obesity Reduction Efforts

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Abstract

In 2009, Massachusetts (MA) Department of Public Health (DPH) implemented new regulations that required public schools in the state to measure height and weight, determine body mass index (BMI), and notify parents of children in grades 1, 4, 7, and 10 of their child's weight status. After 3 years of implementation, MA DPH recently abandoned parental notification of school-based BMI screening results citing several concerns including flaws in the ability to monitor the way that the BMI screening results were communicated from the schools to parents/guardians and some reports of breaches in confidentiality of students' measurements. In this article, we review implementation issues that could have impacted the success of the MA DPH regulation as well as lessons to be learned and potentially applied to future childhood obesity efforts.

In January 2009, the Massachusetts (MA) Department of Public Health (DPH) launched its "Mass in Motion" initiative to promote wellness and improve overweight and obesity in the state. One of the strategies employed to address childhood obesity was a new regulation that established a body mass index (BMI) screening initiative for children, requiring public schools in the Commonwealth to: 1) collect heights and weights of students in grades 1, 4, 7, and 10; calculate student's BMI and age- and sex-specific percentile, 2) mail BMI screening results and informational materials to each student's parent/guardian, and 3) report aggregate BMI data to the MA DPH (1). Prior to this change, MA public schools collected heights and weights of students in all grades but were not required to notify parents of their child's BMI status. Funding for the new BMI initiative was derived from Municipal Wellness grants with monies obtained from five major health-funding foundations in the Commonwealth. After 3 years of implementation, the BMI initiative resulted in surveillance data on childhood obesity prevalence—important in guiding and evaluating prevention initiatives in the state.

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However, citing flaws in the ability to monitor the way that the BMI screening results were communicated from the schools to parents/guardians, reports of breaches in confidentiality of students' measurements, and unintended consequences of bullying and negative body image as a result of sharing BMI measurements (1) in a recent 10–1 vote, the Public Health Council of MA voted to suspend the requirement that state schools send letters to parents to notify them of their child's BMI.

To date, more than 21 states collect height and weight measurements of school children for surveillance purposes (2). In 2003, in an effort to address the childhood obesity epidemic, Arkansas passed an act to become the first state to additionally notify parents of their child's BMI screening results and recommend that each school assess and report to parents their child's BMI percentile each year in grades kindergarten through 12 (3). While several states followed suit, less than half of the states which conduct school-based BMI screening notify parents of the results. Similar to the Arkansas Act, the intent of the screening and notification policy in MA and across the several states that have implemented similar policies was to enhance obesity awareness among parents and their children and increase engagement by school, clinical, public health, and community leaders in response to the epidemic. Emerging evidence of BMI screening and parental notification shows conflicting results about the impact of BMI screening on childhood obesity rates. Arkansas noted a halt in the progression of overweight and obesity over their first four years (2003–2007) of BMI screening which they attribute to a multifaceted approach to modifying the school environment and support of parents through communities (3). In contrast, California noted no change in childhood obesity rates over a seven year period (2001–2008) among children whose parents received notification compared with those who did not (4).

The MA experience highlights several implementation issues which could have impacted the success of the program. First, although efforts were made to encourage communication between the school, family, and the child's physician about the BMI screening results, Family Educational Rights and Privacy Act and the Health Insurance Portability and Accountability Act imposed limits on the flow of information about a child's weight status between schools and clinicians. Thus, the schools were not able to directly communicate with the child's primary care provider or to leverage clinical supports for weight management. Second, the letters to parents/guardians (Figure 1) included their child's BMI percentile and weight category but offered general, non-tailored guidance on ways parents could address the issue. For example, while the letters provided a link to the "Mass in Motion" website (5) which contained information on opportunities for healthy eating and active living, they lacked more individualized information on school, neighborhood, or clinical programs parents could utilize to help their child achieve a healthy weight. Third, while the regulation required schools to mail the letters to parents to ensure confidentiality, some letters were sent home in children's backpacks. This led to some parental reports that their child had been subjected to bullying, weight stigma and bias, and decrease in self-esteem associated with their distribution (6). Protection of confidentiality may have been limited by insufficient funding to implement the universal parental notification.

The MA experience also provides evidence that interventions in one sector alone may be limited in their effectiveness in reducing childhood obesity and that sustainable change to

shift children's growth trajectories will require *coordinated*, multi-sector approaches to impact environmental influences on obesity (7). Could the BMI initiative have worked better if there was the ability to ensure communication and linkages between parents, schools, communities, and clinicians to support behavior change? Could it have been possible for the school nurse, after the appropriate parental consent was obtained, to have shared electronic health records with the child's clinicians and have had the ability to electronically place a referral from the school to the child's clinician to leverage clinical weight management resources? Would it have been helpful if children who received letters were directly referred to community-based programs such as the YMCA or local recreation departments to support more physical activity? Such family-focused integration and multidirectional flow of information between schools, parents, and clinicians could have assisted in the implementation of the BMI initiative and ultimately, its effectiveness. MA is already innovating in several ways to promote multi-sector interventions through implementation of the MA Childhood Obesity Research Demonstration Project (8) and by creating an open-source, bi-directional, electronic referral program that would enable electronic community-clinical linkages as part of a State Innovation Model award received by MA DPH from the Centers for Medicaid and Medicare Services (9).

Further evaluation is needed to examine the effectiveness of the BMI screening and parent notification program in MA and other states. Evidence is already suggesting, however, that similar single-sector interventions will have limited effectiveness in improving children's weight trajectories. Approaches that aim to support families across multiple sectors and that create meaningful partnerships between families, clinicians, and community agencies can have a collective impact on reducing childhood obesity.

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Dear Parent or Guardian:

Your child, _____, was weighed and measured as part of the Body Mass Index (BMI) Screening Program. BMI is a way we can check to see if your child has a healthy weight. The results of the screening compare your child's height and weight to other children of the same age and sex. The results are given as a "percentile." Your child's BMI is only being shared with you. No one else will see these results.

Your child's results were:

Height: _____ ft. _____ in. Weight: _____ lbs. BMI Percentile: _____

If your child's BMI is below the 5th percentile, he or she may be underweight. If your child's BMI is above the 85th percentile, he or she may be overweight or obese. If your child is not in the healthy weight range, you should talk with your child's doctor or nurse. He or she can give you ideas about how to help your child get to a healthy weight.

Your child's weight category is:

Underweight _____
 Normal weight _____
 Overweight _____
 Obese _____

You may have talked about your child's weight with your doctor or nurse before, but you can use these screening results to talk with them again. If your child does not have a regular doctor or does not have health insurance, please contact me.

BMI may not tell the whole story about your child's weight. Other things can affect your child's BMI. For example, BMI cannot tell the difference between muscle and fat. An athletic child with a lot of muscle may have a high BMI but not be overweight.

I am including information with this letter to help you learn more about what you can do to make sure your child is healthy. You can also learn more at the Department of Public Health's website www.Mass.Gov/MassInMotion. If you have any questions, please call me at _____.

Sincerely,

Figure 1.

MA BMI notification letter. [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]