

**National Governors Association Center for Best Practices
Healthy Kids, Healthy America Grant**

Healthier Wisconsin Schools Project

Expert Policy Panel Proceedings

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Background

Childhood Obesity: Description of Relevant Health Risks and Problems

National and State Obesity Problem: There is a well-established association between both nutrition and physical activity and obesity. These factors represent key health issues for both the U.S. and Wisconsin. Obesity and being overweight increases the risk of many chronic diseases such as hypertension, Type 2 diabetes, coronary heart disease, and osteoarthritis. Based on 2003 dollars, the annual U.S. obesity-attributable medical expenditures were estimated at \$75 billion. In Wisconsin, the annual obesity-related medical costs estimate was at \$1.5 billion. (Finkelstein, et al., 2004).

The obesity problem has increased dramatically in recent years. Perhaps the strongest evidence for this comes from the 2003-2004 NHANES report which reported that 19% of children (ages 6-11) and 17% of adolescents (ages 12-19) years are overweight. In contrast, these same values from the 1988-1994 survey were 11% and 10% respectively.

Overweight children and adolescent have increased risk factors for heart disease, such as high cholesterol and high blood pressure, compared to those with a healthy weight. Type 2 diabetes is closely linked to overweight and obesity and has increased dramatically in children and adolescents. Overweight adolescents have a 70% chance of becoming overweight or obese adults. The most immediate consequence of overweight, as perceived by children themselves, is social discrimination (*Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*, 2001).

Statewide Obesity: The obesity problem has also increased dramatically in Wisconsin in recent years. Based on self-reported adult heights and weights from the BRFSS, in the early 1990's, Wisconsin had one of the highest obesity levels in the country (Schumann & Remington, 2005). Between 1992 and 2005, the percentage of obese adults in Wisconsin also increased by 57%. In 2006, Wisconsin again surpassed the national median value for obesity prevalence and now is ranked 22nd highest in the country (Trust for America's Health, 2007). Results from the 2003 National Survey of Children's Health, which is based upon parental reports for a general sample of children between the ages of 10 and 17, found that 15% of children in this age range nationally could be classified as overweight. Wisconsin children had a similar prevalence value of 14%.

The available data from the 2006 Pediatric Nutrition Surveillance System (PedNSS) survey suggest that even Wisconsin's youngest residents may be increasingly affected by this problem. Data analysis of children between the ages of 2 and 5 participating in the Wisconsin Women, Infant, and Children (WIC) Program, found that 9% of children were overweight in 1994. This value has been increasing steadily, up to the most recent value of 13% in 2006.

The YRBS also provides national and state-level data on the weight status of high school students, based on self-reports. According to these results, the percentage of Wisconsin students who were overweight increased from 13% in 1999 to 14% in 2007, while the percentage of students who were obese increased from 10% to 11%. Although clear linear trends have not yet been established, the data suggests an 11% increase in each parameter.

Statewide Physical Activity: The lack of adequate and regular physical activity is a problem for Wisconsin youth. This is supported by results of the 2007 Wisconsin YRBS which found that just over one-third (38%) of

students reported being physically active for a total of 60 minutes per day on 5 or more of the past seven days. In addition, a high percent of high school students report sedentary behavior. One quarter of students reported watching three or more hours of TV on an average school day. Twenty percent of students reported playing video or computer games or used a computer for something that was not school work for 3 or more hours per day on an average school day. For those youth relying on school for physical education (PE), only 54% of students reported attending PE class on one or more days in an average week. Only 41% of high school students reported attending PE on a daily basis during an average school week.

Statewide Nutrition: The 2007 Wisconsin YRBS results reveal that daily consumption of fruits and vegetables is low, with only 18% of students reporting that they ate fruits and vegetables five or more times per day in the past seven days. The Healthiest Wisconsin 2010 annual status report found that only 58% of high school students eating two or more servings of fruit per day down from 61% in 1999. Of particular concern is that high school students are drinking sugar sweetened beverages daily, 25% of students reporting drinking soda every day during the past seven days. Only 36% of students reported consuming breakfast every day during the past seven days.

Description of Youth Populations At Risk for Health Disparities

Demographics: Wisconsin public school students are increasingly diverse in terms of socio-economic status (SES) and race/ethnicity. The prevalence and concentration of low SES students and students of color are critical to identifying health disparities related to physical inactivity and poor nutrition (PAN). Low SES is defined as students receiving free and reduced lunch and/or families, women, and children living at least 100% of the poverty level.

Statewide Demographics of K-12 Public School Students
(% of K-12 public school student population)

	1997	2002	2007	10 year change (% of baseline)
Low SES	19.9	26.1	31.4	+58%
Black	9.6	10.1	10.4	+ 8.3%
Asian/Pacific Islander American	2.9	3.4	3.6	+ 24.0%
Hispanic	3.5	5.0	7.2	+ 106%
American Indian	1.4	1.4	1.5	+ 7%
White	82.6	80.2	77.3	- 6.4%

Source: DPI, Wisconsin Information Network for Successful Schools, 2007

While low socio-economic status students exist in every region of the state, they are concentrated in urban and certain rural areas. For example, urban areas in south-eastern and south-central Wisconsin have high concentrations of low SES students. Students of color are also concentrated in these parts of the state.

School District	% Low SES students	% students of color (mainly Black and Hispanic)
Milwaukee	79.3	84.0
Racine	40.2	49.1
Kenosha	41.1	35.6
Beloit	60.3	51.2

Source: DPI, Wisconsin Information Network for Successful Schools, 2007

Certain rural school communities include similar demographics, as shown in the following examples where students of color are primarily American Indian.

School District	% Low SES students	% students of color (mainly American Indian)
Menominee Indian	82.5	99.2
Bayfield School	58.8	74.9

Source: DPI, Wisconsin Information Network for Successful Schools, 2007

Within these urban and rural communities, even higher concentrations of low SES students attend certain schools. For example, all but one of these school districts have schools with 80-100% of low SES students. Thus, high concentrations of low SES students exist in certain easily identifiable Wisconsin schools. Unfortunately 10% (211 of 2,121) of Wisconsin schools now have low SES prevalence of 70% or greater. These “high poverty” schools exist within 25 school districts, but are concentrated in eight school districts.

Statewide, nearly three-fourths of Black and Hispanic children are low SES, compared to one-fourth of Whites. The prevalence of low SES in Milwaukee, like many urban communities, differs among racial groups. The disparity in child poverty is particularly evident. Nationally, Milwaukee has one of the highest poverty rates among Black children living in an urban area, three times that of White children living in Milwaukee. (U.S. Census Bureau)

Low SES and PANT Disparities: A good deal of evidence indicates that health disparities related to PANT exist among low SES students, students of color, and their peers. Poor nutrition and physical inactivity are all higher among low SES populations. The following statistics from national studies illustrate the increased risk among low SES populations:

- Twenty-two percent of children with family incomes below 100 percent of the Federal Poverty Level were overweight, compared with 9.1% of children with family incomes at or above the Federal Poverty Level. (NHANES, 2004).
- Several studies have investigated the association between food insecurity and obesity. The two consistent findings are that White women were more likely to be obese and White girls aged 8 to 16 were more likely to be overweight (Frongillo, 2003).
- Sufficient activity is less common among women than men and among those with lower incomes and less education (CDC, *Physical Activity and Good Nutrition: Essential Elements to Prevent Diseases and Obesity*, 2007).

Disparate Populations: State and local data indicate these patterns exist among Wisconsin students. Black, Hispanic, American Indian and youth in families with low SES show disparities in obesity. Rates of physical inactivity among Black and Hispanic youth are consistently higher than their White counterparts. Disparities in nutrition were not identified with available data. Evidence for these conclusions is provided below.

Obesity Disparities: In Wisconsin, adult obesity prevalence varies by racial or ethnic categories. Based on combined data from the 2004-2006 BRFSS, individuals in the White group have the lowest observed level of obesity (24%) while those in the American Indian group have the highest observed value (40%), and those in the Hispanic and Black groups have estimates that fall between the two (34% and 29%, respectively).

For children ages 2 to 4 years old participating in the WIC program, the overweight prevalence is relatively high for American Indian (21%) and Hispanic (18%) children, compared with White (11%) and Black (10%) children (PedNSS, 2006). Also, based on the combined Wisconsin YRBS years of 2005 and 2007, racial and ethnic differences in weight status are again evident. In particular, Hispanic students have a relatively high-observed prevalence of at risk of overweight (20%), compared with Asian, Black, and White groups (13% to 14%).

The burden of obesity in Wisconsin appears to disproportionately impact Hispanic and American Indian youth and these same adult groups, with the addition of Blacks. These findings and the results for risk factors for overweight in youth, support the idea that many challenges lie ahead for Wisconsin to make progress in stemming the obesity problem and making inroads with school age youth regarding managing weight status by appropriately meeting their dietary and physical activity needs.

Physical Activity Disparities: The lack of adequate and regular physical activity is a problem for Wisconsin youth. While levels of physical activity and opportunities to participate in physical activity need to increase statewide, the need for targeted approaches to addressing physical activity becomes pronounced when the data is analyzed by race and ethnicity.

The results of the 2007 Wisconsin YRBS indicate a disparity in both physical activity levels and opportunities for physical activity between White youth and their Black and Hispanic counterparts. Twenty-five percent of Hispanics and 32% of Blacks reported being physically active for a total of 60 minutes per day on 5 or more of the past 7 days, compared to 40% of White students. Black and Hispanic students reported higher levels of sedentary activity (i.e., screen time including TV and video games) than their White counterparts. Fifty-five percent of Black and 32% of Hispanic students reported watching 3 or more hours of TV on an average school day compared to 21% of White students.

While students may rely on physical activity opportunities during school hours, only 37% of Black and 49% of Hispanic youth reported attending a PE class on one or more days in an average week, well below the average of Whites at 57%. Opportunities for physical activity in schools have dropped significantly for Black youth since 2005 when 62% had reported attending a PE class on one or more days in an average week.

It is important for the State to look more closely at the health disparities that exists among Milwaukee youth because of the size of Milwaukee's student population and the size of the city's racial/ethnic groups. The U.S. Census Bureau estimates the population of the city of Milwaukee to be 586,941. Milwaukee has the most diverse population of any city in Wisconsin, 38% White, 37% Black, 12% Hispanic, 3% Asian, 1% American Indian, and 9% other.

Comparisons between the 2007 Wisconsin YRBS and the 2007 Milwaukee Public Schools (MPS) YRBS found that 50% of MPS students reported watching 3 or more hours per day of TV on an average school day, twice the statewide average. MPS students were also more likely to report playing video or computer games or using a computer for something that was not school work for three or more hours per day on an average school day. This increase in screen time impacts the time available for physical activity. Only 28% of MPS students reported a total of at least 60 minutes of physical activity per day on 5 or more of the past 7 days, 10% below the state average. In addition, the percentage of students who reported attending a PE class at least once in the past week was also 10% below the state average of 54%.

A clear disparity exists when comparing Black and Hispanic MPS students to their White counterparts. Fifty-six percent of Blacks and 47% of Hispanics reported watching three or more hours per day of TV on an average school day compared to 32% of Whites. Whites were also significantly more likely to report being physically active for a total of 60 minutes per day on five or more of the past seven days compared to their Hispanic counterparts (33% vs. 22% respectively). (2007 MPS YRBS)

Nutrition Disparities: As stated earlier in the statewide nutrition results, most Wisconsin high school students, regardless of race/ethnicity, age, or gender fail to eat adequate amounts of fruits and vegetables and reduce their consumption of sweetened beverages. The 2007 Wisconsin YRBS results do point to some apparent discrepancies between racial/ethnic groups. Hispanic and Black students were less likely to report eating one or more pieces of fruit in the past 7 days than White students (80%, 78%, and 90% respectively). Hispanic students also reported lower daily consumption of 100% fruit juice than White and Black students (79%, 82%, and 84% respectively). Black students were more likely to report drinking pop one or more times per day during the last seven days. However, Black and Hispanic students were more likely than Whites to report eating five or more fruits and vegetables per day in the last week.

Among MPS students, YRBS data indicate poor nutrition compared to state averages. MPS students consistently reported lower levels of consumption on every food measure, including those who drank three or more glasses per day of milk during the past seven days and those who ate fruit, green salad, potatoes, carrots, or other vegetables one or more times during the past seven days. The percentage of students who reported eating breakfast on seven of the past seven days was 20% compared to the state average of 36%. Black MPS students were significantly less likely to report having ate breakfast on seven of the past seven days compared to their White peers (17% vs. 31% respectively)

Consequences of Childhood Obesity: In recent years, an increasing number of children are being diagnosed with weight-related health conditions. As reported by CDC, these conditions include type 2 diabetes, high cholesterol, and high blood pressure. Overweight children are significantly more likely to have weight problems as adults. As these problems persist into adulthood the negative health consequences increase, to include cancer, stroke, heart disease, osteoarthritis, and diabetes. Along with these health problems come increased societal costs in the form of long-term health care needs and lost days of work and wages.

Wisconsin clearly faces challenges to increase physical activity and healthful eating and to reduce obesity among children. These challenges are even greater when looking at these problems through the lens of health disparity based on race and income levels. However, this data does provide a clear picture of the root causes of these problems, that is, excessive caloric intake compared with caloric expenditure. In other words, Wisconsin kids are eating and drinking too much of the wrong foods and beverages and not getting enough physical activity.

Childhood Obesity: Strategies to Address the Epidemic

Schools Role in Obesity Prevention: Wisconsin was one of 15 states selected as a National Governors Association Healthy Kids, Healthy America grantee for 2007-2008 to advance programs to help prevent childhood obesity. The Healthier Wisconsin Schools (HWS) project was developed to build on Wisconsin's long list of commitments and accomplishments to address the childhood obesity epidemic, particularly in the school setting. Over the last several months the HWS project has helped stimulate discussions and gather important information to better understand the actions necessary to reduce the burden of overweight and obesity among school-age children in Wisconsin. The HWS partners believe that healthy schools are key to achieving the long-term goal of promoting good nutrition, physical activity, and healthy weight among children. **Schools cannot solve the obesity epidemic on their own, but it is unlikely to be halted without strong school-based policies and programs.**

A school can effectively increase healthy behaviors (e.g., physical activity, fruit and vegetable consumption) of school age children through environmental changes and consistent policy implementation and enforcement. A healthy school provides clear and consistent health messages, accurate health information, and ample opportunity to use it. It is recognized that what happens in the classroom, gymnasium, cafeteria, at school events, at home, and in the community can reinforce and educate students, staff, and families on developing lifelong healthy behaviors. In the end the HWS project will help families, teachers, school administrators, legislators, and community members join forces to reduce childhood obesity in Wisconsin.

Children spend a large part of their lives in school, starting at the age of 5 and ending at the age of 18. Nearly every school in the nation serves at least one and often two meals a day, five days a week. Schools have the opportunity, then, both to influence the nutrition children receive on a regular basis and to help children establish healthful lifelong eating habits. In addition, schools can help children get regular exercise and can offer courses on health education and promotion. Schools also have frequent contact with parents, this avails them the opportunity to influence both the foods children consume at home and their parents' understanding of the importance of physical activity for their children's health. In short, schools offer a prime target to promote healthy habits and to reduce rates of obesity.

National Governors Association – Creating Healthy States: The healthy states initiative supported by the National Governors Association highlights four strategies to improve the health of children and adolescents by promoting nutrition and physical activity in schools. These strategies are:

1. Advocate for improved health within the school environment.
 - Establish healthy school environments by advocating for improved health education, including nutrition education and physical education.
 - Development of state guidelines related to nutrition and physical activity and support staff wellness programs in schools.
2. Engage partners in developing healthier school environments.
 - Engage parents in developing healthier school environments.
 - Convene an industry forum with companies that contribute to healthier environments.
3. Promote the use of strategic policy tools.
 - Schools should assess their nutrition and physical activity environment.
 - Local district-coordinated school health councils need to be developed.
4. Integrate community resources to improve school health outcomes.
 - Promote before- and after-school nutrition and physical activity programs.

- Engaging parents and community resources to address specific local, rural, or urban needs.

The HWS project is addressing these four strategies through an evaluation and technical assistance project on the Governor’s School Health Award and by engaging state experts in a process to determine policy recommendations to increase healthy eating and physical activity. The goal is to focus project efforts in two directions; locally to encourage change in individual schools and school districts and system-wide by determining what broader policies would be accepted at the local level.

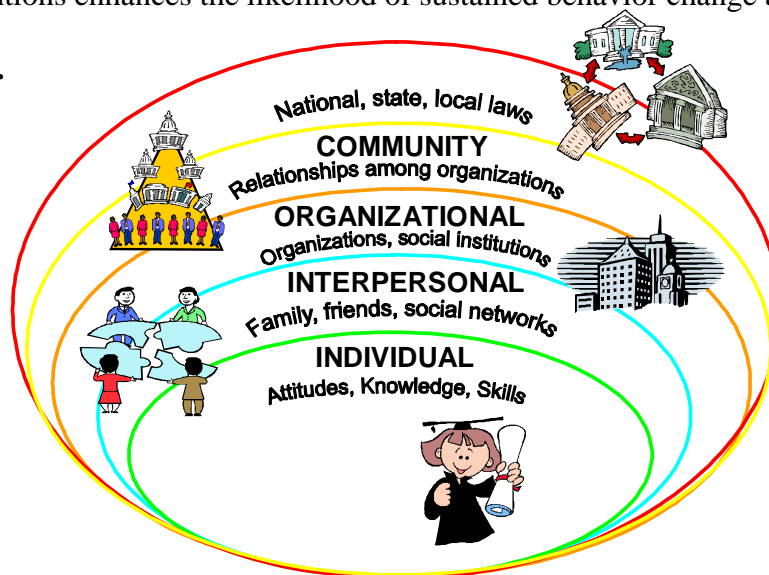
Healthier Wisconsin Schools Project: Twenty schools participated in the evaluation of the Governor’s School Health Award. The goal of the evaluation project was to determine the award programs effectiveness as an agent for local policy and environmental change. The evaluation findings are being used to strengthen the award program and increase the number of schools who receive an award (i.e., increase the number of high quality school health programs). In addition, the information gathered through this assessment will also be used by the policy team/expert panel and partners to develop a policy agenda, including recommendations for state (top down) and local decision (bottom up) makers to address broader system level barriers to schools making changes to improve their school environment.

An interdisciplinary policy team/expert panel was developed in the spring of 2008. The make-up of this panel included members of the Governor’s Council on Physical Fitness and Health, the Office of Governor Jim Doyle, Department of Public Instruction staff, Department of Health Services staff, and the Wisconsin Sports Foundation. Additional members were selected to the policy panel or as consults to the panel based on their expertise in the area of childhood overweight and school policy. This include representatives from the Wisconsin Association of School Boards; Wisconsin Association of District Administrators; Wisconsin Action for Healthy Kids; Wisconsin Association of Health, Physical Education, Recreation, and Dance; Wisconsin Partnership for Activity and Nutrition; Wisconsin Parent Teacher Association; WEAC; WEA Trust, Milwaukee Public Schools, and the Wisconsin Association of School Nurses.

Methods

After the Expert Policy Panel convened, they began to determine a means for addressing the complex public health of childhood obesity. As it will require a multifaceted approach, the Panel considered the Social Ecological Model (SEM) as a framework for addressing the issue. The Centers for Disease Control and Prevention (CDC) has recommended using the SEM as a framework for addressing obesity. The SEM conceptualizes social change in five spheres/levels of influence: individual, family/interpersonal, institutional/organizational, community, and policy/systems. Using a behavioral theory, such as the SEM, in population-based interventions enhances the likelihood of sustained behavior change and thus, culture change.

Social Ecological Model.



Using the SEM concept, the Expert Policy Panel sought to determine opportunities to support healthy eating and physical activity in Wisconsin schools through organizational (local-level) and/or public policy (state-level; formal legislation). Moreover, there is conclusive evidence that the following health behaviors are associated with prevention of weight gain in children, adolescents, and adults:

- **Increased fruit and vegetable consumption;**
- Decreased sweetened beverage consumption;
- Decreased high-energy dense food consumption;
- Increased breastfeeding initiation, exclusivity, and duration;
- **Increased physical activity;** and
- Decreased television time

To address these health behaviors, the Expert Policy Panel further refined **potential policy concepts** for development related to the following:

- Increasing access to fruits and vegetables;
- Increasing physical activity opportunities; and
- Increase nutrition education in Wisconsin schools.

Within the contexts of these identified policy concepts, a template was created that contained policy suggestions for the Panel to consider. The creation of the policy template was a collaborative effort of the Wisconsin Department of Health Services (DHS), the Wisconsin Department of Public Instruction (DPI) and the National Governor's Association (NGA). The original template consisted of 42 policy recommendations that were broken into the following three major policy concept sections: Increase Access to Fruits and Vegetables, Increase Physical Activity Opportunities and Improve Nutrition Education. When examples from other states and/or research on the effectiveness of the program/policy could be found, they were included in the template to provide an estimate of the feasibility of the policy recommendation.

A wide variety of resources were used to create the policy template, which included researching existing and past examples of similar policies that were passed in other states. This included, but was not limited to:

- 2007 End of Year Report Balance. Issue 5 (June 2008). Robert Wood Johnson Foundation. <http://www.rwjf.org/files/research/balance122007.pdf>
- Health Lifestyles – Innovations in State Policy. Childhood Obesity – Update of Policy Options and Research. National Conference of State Legislatures. June 2007.
- Health Policy Tracking Service. State Actions to Promote Nutrition, Increase Physical Activity and Prevent Obesity: A Legislative Overview. Thomson West October 3, 2005.
- Legislative Successes. California Center for Public Health Advocacy. <http://www.publichealthadvocacy.org/legsucccess.html>
- Texas Obesity Policy Portfolio 2006. Texas Department of State Health Services. Center for Policy and Innovation.
- Nutrition and Physical Activity: A Policy Resource Guide. Washington State Department of Health. February 2005.
- Nutrition, Physical Activity and Obesity State Legislative Database. Department of Health and Human Services. Centers for Disease Control and Prevention. <http://apps.nccd.cdc.gov/DNPALeg/index.asp>

On July 15, 2008, the 42 original policy recommendations in the template were discussed and examined at a meeting of the Expert Policy Panel in Madison, Wisconsin. The panel was made up of members from:

- Wisconsin Department of Health Services (DHS)
- Wisconsin Department of Public Instruction (DPI)
- Governor’s Council on Physical Fitness & Health
- Wisconsin School Nutrition Association
- Wisconsin Association of School Boards (WASB)
- Wisconsin Education Association Council (WEAC)
- Wisconsin School Nurses Association
- Wisconsin Dietetic Association
- Milwaukee Public Schools
- Wisconsin Partnership for Activity and Nutrition (WIPAN)
- Wisconsin Prevention of Obesity and Diabetes (WiPOD)
- WEA Trust

Panel members were broken up into three small groups, one for each policy concept, and given the opportunity to not only discuss the original policy options, but to also add any policy options they felt were missing. Each group was given the task to choose their top three policy recommendations. The following are the top three recommendations for each policy concept area, as selected by the small groups:

Increase Fruit & Vegetable Access

1. Ensure that free fruits and vegetables are offered and available throughout school day (Note: this could be done through a variety of strategies, including having a fruit and/or vegetable bar, salad bar, snack, or as part of a meal reimbursement for increasing fruits and vegetables into the meal pattern).
2. Establish criteria that encourages purchasing from local farmers – Farm to School
3. Establish stronger enforcement of local school wellness policy implementation to support fruit and vegetable consumption.

Increase Physical Activity Opportunities

1. Mandate the establishment of school health councils to implement coordinated school health programs.
2. Require phys. activity curriculum to provide, 60% of the time, moderate to intense physical activity, as measured by healthy heart rate.
3. Change policy (Standard J) from K-6 to K-8 for the amount of PE periods/week

Improve Nutrition Education

1. Provide assistance to schools implementing nutrition education into their curriculum.
2. Establish Wisconsin’s current working nutrition education guidelines as state standards.
3. Create a nutrition education marketing campaign targeted at parents, families and other people who are involved with youth.

Panel members were asked to vote on the top nine selected policy recommendations. Each member was given five votes. They had to vote for at least one recommendation in each of the three policy areas and could not vote multiple times for a single choice.

Results

As determined by the vote, the following are the top five policy recommendations of the Expert Policy Panel:

1. **Change policy (Standard J) from K-6 to K-8 for the amount of PE periods/week (1st) – Phys. Act.**

2. **Mandate the establishment of school health councils to implement coordinated school health programs.**
(Tied for 2nd) – Phys. Act.
3. **Provide assistance to schools implementing nutrition education into their curriculum.**
(Tied for 2nd) – Nutrition Education
4. **Establish Wisconsin’s current working nutrition education guidelines as state standards.**
(Tied for 4th) – Nutrition Education
5. **Ensure that free fruits and vegetables are offered and available throughout school day – Fruit and Vegetable Access**

With this new, narrower focus, the Expert Policy Panel could begin developing strategies and gathering additional research for each of the five recommendations. At the August 12, 2008, panel meeting in Madison, Wisconsin, panel members were given a new literature review of studies that examined the need and the effectiveness of programs that were similar to the policy/program recommendations of the panel. At the August 12th meeting, the Expert Policy Panel Members further prioritized the policy recommendations and developed strategies on how to gain support for these policy strategies. The group decided to focus and strategize on two policy recommendations and they are, ensuring that free fruits and vegetables are offered and available throughout the school day and encourage the development of district-level school health advisory councils.

Discussion

After potential policies to address these concepts were identified, the Department of Health Services’ Nutrition and Physical Activity Program conducted extensive literature reviews on the following potential policies:

- **Expert Policy Panel Recommendation:** Ensure that free fruits and vegetables are offered and available throughout school day

Literature to Support Policy:

Research has shown that eating habits are influenced by the interaction between individuals, and their social, cultural, and physical environments. Traditional public health approaches for eating behavior change in populations have primarily focused on increasing individual knowledge and awareness through educational approaches (French). Recently, greater attention has been given to the role of environmental influences on food choices and to policies that might affect these environmental variables (French). Thus, it is likely that preventing childhood obesity will depend on a willingness to change the social and physical environments. Sallis and Glanz note that recent changes in the nutrition environment, including greater reliance on convenience foods and fast foods, a lack of access to fruits and vegetables, and expanding portion sizes, may be contributing factors to overweight and obesity (Glanz/Sallis). The problem of accessibility of wholesome foods is also directly linked to the competing accessibility of energy-dense, nutrient-poor products. Thus, a lack of access to and the relatively higher cost of fruits and vegetables, and other nutritious foods may keep children from consuming them. Additionally, a number of studies have indicated that individuals of low socio-economic status and certain minority groups may be at increased risk for lower fruit and vegetable consumption.¹⁰ Thus, lack of access is a key barrier to student consumption of healthier foods.

A meta analysis by Blanchette et al. noted that of all determinants, the availability and accessibility of fruit and vegetables and taste preferences were most consistently and positively related to consumption.¹² Therefore, the school food environment can have a large impact on children’s and adolescents’ dietary intake because up to two meals and snacks are eaten at school every day. Schools provide a significant

proportion of total daily energy intake for most students, both through the federally reimbursable school meals program and through competitive food sources such as a la carte and vending machines. (French).

To date, a number of school-based interventions have demonstrated that increasing children's fruit and vegetable intake is possible. There are several key strategies, including the following, identified in the peer-reviewed literature that could encompass a comprehensive policy addressing the availability of fruit and vegetables in Wisconsin schools.

○ **Adding fruit or vegetables to the school lunch/breakfast meal patterns:**

School meal programs significantly improve school-age children's diets. In general, children who eat school lunches and breakfasts have higher mean intakes of micronutrients than those that do not. Story et al. found that offering more and greater varieties of fruits and vegetables at lunch, combined with taste testing and skill building activities in the classroom, lead to increased fruit and vegetable consumption at lunch.¹⁰ Furthermore, Horne et al. found substantial increases in children's fruit and vegetable consumption by offering fruits and vegetables at lunch and snack time, accompanied with role modeling and taste testing opportunities for students. In addition to the peer-reviewed literature, the California Department of Education prepared a report based on the findings of the *California Fresh Start Program*. In 2005, California enacted Senate Bill 281, which established the *California Fresh Start Program* in order to encourage and support schools to provide additional portions of fruit and vegetables in the School Breakfast Program; the bill also designated the purchase of California-grown produce as a priority when possible. The pilot program was designed to offer a 10-cent per meal reimbursement to schools for the purpose of increasing the servings of fruits and vegetables offered to school children at breakfast. Findings from the *California Fresh Start Program* included the following:

- the amount of fresh fruits and vegetables offered to students doubled;
- the amount of fresh fruit taken by students at breakfast increased by 136%
- participation in school breakfast increased by about 2%, which was enough to bring nearly \$1 million in additional federal meal reimbursement to the state.

The report recommended increasing the reimbursement rate for fruits and vegetables to cover the cost of providing fruits and vegetables, particularly varied fresh fruits and vegetables which the students found most appealing. The report also cited the need to provide additional funding to schools to serve fresh fruits and vegetables throughout the day and for school food service personnel to work with local growers and producers.

- **Offering fruit and vegetables as part of a snack:** Bere et al. found that offering students a free fruit increased their fruit and vegetable intake compared to students in a control group, with some sustained effect sustained three years later. Moreover, Jamelske et al. found that student's willingness to try and attitudes towards fruits and vegetables significantly changed as a result of the implementation of the USDA-funded Fresh Fruit and Vegetable Snack Program in select schools in Wisconsin. The program offered a fresh fruit or vegetable snack during the school day to students.

○ **Offering fruit or vegetables as part of a salad bar**

Adams et al. found that in using a salad bar at school, children consumed more fruits and vegetables. Heneman et al. evaluated the effect of the Children's Health through Farming, Food, and Fitness Program (CHF3), piloted in California schools, on the dietary knowledge and habits of participating children. One of CHF3's main components included the establishment of salad bars with integrated nutrition messages into school cafeterias. Students, specifically fourth and fifth graders, participating in

the CHF3 Program significantly increased their consumption of fruits and decreased their consumption of cookies. The researchers noted that results from CHF3 demonstrated that altering the school environment to create an environment that links healthy lifestyles at schools with that among families and communities can be one step toward improving children's health and dietary habits.

- **Buying locally produced fruits and vegetables for school meals and snacks (e.g. Farm-to-School); and**

Efforts to improve the quality of foods in schools could include farm-to-school programs, which link local farmers providing fresh locally grown produce to school food service (Story). Researchers from the University of California-Davis-based Sustainable Agriculture and Research and Education Program found that students preferences for fruits and vegetables improved when participating in a farm-to-school salad bar program.

- **Expert Policy Panel Recommendation: Provide nutrition education standards and related technical assistance for schools/teachers**

Literature to Support Policy:

Research supports the effectiveness of behavioral-oriented curriculums promoting healthful food choices and physical activity. Anderson et al. assessed the impact of school-based nutrition education interventions aimed at increasing the consumption of fruits and vegetables and concluded that it had a modest, but significant effect on cognitive and attitudinal variables on fruit intake. Moreover, Abood et al. found that having school-based nutrition education made an impact on nutrition knowledge and positive behavioral intentions. Story et al. report a need for more support and regulatory action is needed by federal, state, and local authorities to strengthen and improve healthy eating and nutrition education in schools. There is also a need for classroom nutrition education to complement changes in the school environment to increase students' skills for adopting healthy lifestyles.

- **Expert Policy Panel Recommendation: Mandate the establishment of school health advisory councils to implement coordinated school health programs**

Literature to Support Policy:

The National Association of State Boards of Education state-level school health policy tracking service reports that 27 states have policies supporting school health councils. School health councils have helped strengthen school physical education and health education curricula and have assisted in bringing about profound changes in school environments, such as the adoption of nutrition standards, establishment of walking programs for staff and students, and the opening of school facilities for after-school physical activity programs. Comprising representatives from the home, school, and community, school health councils establish goals for the school health program and facilitate health programming in the school and between the school and community. Furthermore, the Institute of Medicine states that "the essential foundation for any successful comprehensive school health program is built from the involvement of a wide range of community stakeholders" and continues that "this involvement can be effectively organized and channeled through the formation of some type of community school health coordinating council". Fetro showed schools with councils that addressed specific health education topics sometimes had greater odds than schools that did not have councils addressing these topics to require health instruction in the topics.

- **Expert Policy Panel Recommendation: Increase the number of minutes that middle schools students are active in physical education**

Literature to Support Policy:

Regular physical activity is associated with a healthier, longer life and with a lower risk of heart disease, high blood pressure, diabetes, obesity and some cancers. Despite all the benefits of physical activity, most school-aged children in the US are sedentary (Community Guide). A systematic review of published studies, conducted on behalf of the Task Force on Community Preventive Services, found that physical education classes taught in schools that included enhanced length or activity levels are effective in improving both physical activity levels and physical fitness among school-aged children (Community Guide). Physical education requirements decline drastically as a student’s grade level increases. Moreover, the quality of physical education classes is also crucial to their effect on child and adolescent overweight. The National Association for Sport and Physical Education recommends 150 minutes a week of physical education for elementary school children and 225 minutes a week for middle- and secondary school children.

Conclusions /Next Steps

The next steps for the National Governor’s Association Healthy Wisconsin School Project Expert Policy Panel’s Recommendations are as follows:

- **Increasing Physical Activity Opportunities**

Policy Recommendation #1

Change

Physical Education School District Standards J, which currently reads: K-6 – At least three times per week minimum of which two must be taught by a licensed Physical Education teacher and the third can be conducted by a classroom teacher under the direction of a certified physical educator

To

K-8 – Using the same above language except this section will increase the physical education for middle school students from a weekly minimum to at least three times per week.

Rationale

According to the Wisconsin Physical Education On-Line Profiles results, 80 percent of the schools reported teaching physical education every other day. This better reflects the state of physical education in Wisconsin schools

Action

The Department of Public Instruction will take the lead in modifying this physical education standard.

Recommendation #2

Mandate the establishment of School Health Advisory Councils to implement comprehensive school health programs

Rationale

School Health Advisory Councils are designed to address a variety of health related areas including; health education, physical education, nutrition services, counseling, psychological and social services, health services, healthy school environment, health promotion for staff, and family and community involvement. Establishing a School Health Advisory Council would be an effective way to focus promoting physical activity and healthy eating on a district-wide level. Additionally, such a Council would also help school districts in meeting the 2004 requirement to participate in the federally funded school meal programs and institute a local school wellness policy.

Action

Option A

Work with our state partners such as the Wisconsin School Boards Association and the Wisconsin School District Administrators, and Wisconsin Association of Health, Physical Education, Recreation and Dance; modify the existing statute on human growth and development or create a new statute.

Option B

The Department of Health Services (DHS) in collaboration with the Department of Public Instruction have concurred on a budget proposal to be submitted by DHS to provide start-up grants for 350 schools to develop School Health Advisory Councils to manage school health programs in K-12 schools.

- **Improve Nutrition Education**

Recommendation #3

Provide assistance to schools implementing nutrition education into their curriculum

Rationale

The need to better integrate nutrition education into schools curriculum is paramount. Key areas of concern are providing curriculums that are sound with credible evidence, ready-made and available statewide and that teachers and nurses have access to online training programs. Additional issues include finding some reward or incentive for schools to comply and the need for some type of overarching marketing or branding targeted toward parents, families, and school-age youth.

Action

The Department of Public Instruction's Nutrition Team will take the lead in providing technical assistance to schools in developing and promoting this nutrition education curriculum integration.

Recommendation #4

Establish Wisconsin's current working nutrition education guidelines as state standards

Rationale

Wisconsin is one of two states nationally that does not have nutrition education standards. The current nutrition education guidelines, which were the result of extensive discussion and formulation, provide a good framework for the establishment of state standards. This also will help facilitate a consistent approach to nutrition education curriculum in the classroom.

Action

The Department of Public Instruction has agreed to establish the current nutrition education guidelines as state standards. The plan is to link these standards with the 21st Century standards for educational achievement. This will further strengthen the use and integration of these standards by teachers thus providing the opportunity for more involvement of parents and members of the community. However, at present these standards will only be voluntary for schools, as they will not be mandated.

- **Increase Access to Fruits and Vegetables**

Recommendation #5

Ensure that free fruits and vegetables are offered and available throughout school day

Rationale

The decision to focus on fruits and vegetables was made due to the interest of many school districts in incrementally modifying their menus. Additionally, the available federal funding for increasing fresh fruits and vegetable snacks through the 2008 Farm Bill allows the state an opportunity to support local schools in this area. Lastly, accomplishing this policy will assist some local school districts with meeting one of the requirements of their school wellness policy.

Action

Through the 2008 Farm Bill, Wisconsin has been awarded \$916,838 for the Fresh Fruit and Vegetable Program grant from USDA for the period of 7-1-08 through 6-30-09. The purpose of the program is to increase fresh fruit and vegetable consumption in elementary schools (with a student population designation of greater than 50% free and reduced) by providing a snack to all students free of charge. The level of funds provided to any one school depends on the enrollment. However, at present, this Farm Bill allocation only provides funding to 56 schools in Wisconsin.

Additional Strategies

The Expert Policy Panel will work to inform the 2008 Legislative Council Study, Special Committee on Performance-Based Disease management Programs for Large Populations (includes a focus on childhood obesity), of these proceedings.

Action

One of the members appointed to this Committee is also a key part of both the Wisconsin Partnership for Activity and Nutrition and the Expert Policy Panel. At the October 2008 meeting of this Committee, the Expert Policy Panel proceedings will be shared, which includes all of the above policy recommendations.

It is our hope that these recommendations will help inform and influence the final recommendations of this Committee.

Expert Policy Panel Members

The following organizations and respective individuals participated in the Expert Policy Panel.

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References Cited

To be added

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