Policy Proposal:
Nutrition Education and Seed-to-Plate in Prevention of Obesity and Improving Health of the Children of Wyoming

Team Wyoming
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Columbia University School of Nursing
Executive Summary

Governor Mead and First Lady Mead, we want to address the most pressing issue in the state of Wyoming: nutrition education in secondary schools.

There is nothing riskier than failing to provide nutrition education. Although the percentage of obese adults in Wyoming was less than the nationwide average in 2011, the percentage of obese high school students in the state has been rising steadily since 2003, and is currently close to reaching the U.S. average of 14% (CDC, 2014).

We must implement preventative and remedial measures to halt and reverse the trend. Given the vitality of proper nutrition for the growth and development of our adolescents, and the statistical trends that have been observed, the public school system of Wyoming must take action.

The U.S. Department of Education (DOE) recommends that schools provide at least 50 hours of nutrition education per year to effectively impact children’s eating behaviors. However, Wyoming teachers report a current average of only 6 hours of nutrition education per year.

Failure to educate our students about nutrition increases the incidence of long-term, diet-related chronic diseases, including diabetes and cardiovascular disease. Wyoming's adolescents spend a majority of the year in public schools. This gives us ample opportunity to reach these students before these health-related problems set in. It is critical that Wyoming's schools educate and empower our youth to become competent decision makers when it comes to nutrition.

In addition to better health outcomes, nutrition education is cost conservative and leads to long-term decreased healthcare spending. Spending on obesity-related healthcare in our state is
expected to increase by 450%, from $331 per adult in 2008 to $1,498 by 2018 if current trends continue (Future Costs of Obesity, 2009).

Funding for this policy could come from taxes, the lottery system, or grant funding. Property taxes are the primary source of funding for education, but a percentage of other taxes, such as sales, tobacco, and alcohol, could fund this program. A fraction of the $6 million contributed from our lottery system for education could also fund secondary school nutrition programs. Additionally, Wyoming is eligible for grants of up to $990,000 under the USDA’s Food and Agricultural Science Enhancement program. Finally, we could engage the community by requesting donations, such as gardening tools from local businesses (Almer, 2015).

Schools must provide at least 50 hours of nutrition education per year to impact children's eating behavior. By modeling Wyoming's nutrition policy after successful strategies implemented in other schools, such as those in Bozeman, MT, we can reduce the need for trial and error increasing efficiency (CDC, 2013). Evidence shows utilizing school gardens both increases participation in the school meals program and promotes consumption of healthy food. We need your support in creating a collaborative network between the students, schools, and government to ensure the effectiveness of this important policy.

**Problem in Wyoming**

Adolescent obesity is an imminent concern for the United States’ healthcare system and policy. In 2013, 13.7% of high school students in the US were considered obese, while another 16.6% classified as overweight (CDC, 2014). Obesity can cause various short and long term health effects, including increased risk for heart disease, diabetes, sleep apnea, and various types of
NUTRITION EDUCATION AND SEED-TO-PLATE

cancers, as well as psychological suffering from increased stigma and low self-esteem. Notably, obese adolescents tend to continue on to be obese adults, which indicates that intervention needs to take place early on (CDC, 2015).

In comparison, Wyoming’s rate of adolescent obesity is actually below the national average at 11%. However, while the national rate has increased from 12% to 13.7% from 2003 to 2013, Wyoming’s rate of adolescent obesity has increased more than twice as much, from 7% to 11%, indicating a disturbing trend (CDC, 2014). In addition, in 2013, only 12.9% of adults in Wyoming lived a healthy lifestyle, defined as avoiding tobacco, exercising, and eating healthily. Diet in particular was a contributing factor, with 82.7% of adults not eating enough fruits and vegetables (Wyoming Department of Health [WDH], 2013). This was mirrored in adolescents as well, about 1/3 reported eating fruits and vegetables less than once a day. Also, 13.1% of teens reported fasting in order to lose weight, and 8.1% reported using vomiting or laxatives, compared to 5.1% nationally (WDH, 2014). This illustrates a serious lack of nutrition knowledge. The rapidly increasing rates of adolescent obesity indicate that a burgeoning public health problem is growing in Wyoming that needs to be addressed.
The ideal situation would be to improve Wyoming's secondary school meal system using the following general strategies:

1. Provide more nutritious meal options in all secondary schools
2. Utilize community maintained gardens through school programs to foster cognizance towards healthy eating
3. Establish professional relationships with larger organizations such as US Dept of Agriculture and Wyoming Department of Education

There are several challenges that come with enforcing programs to implement healthier food choices. Wyoming has taken several initiatives to meet national standards but have failed to show competitive results in the health status of their children. Reasons include youth dissatisfaction with new foods’ quality and quantity, shortage of nutritional education in schools and the community, lack of state infrastructure to sustain healthy food menus in schools, and
difficulties in getting all schools to comply with policies. While there are several potential reasons for the failure of federal policy to improve the nutrition in schools in Wyoming, there is no single, clear explanation.

**Evaluated Solutions**

The six groups examined various policy options in order to determine one cohesive policy that could make the largest impact in reducing Wyoming’s adolescent obesity. Policies were evaluated based on relevance to target population, progress, efficiency, effectiveness, and impact on a broader scale.

Among the options suggested there was significant overlap, with the most common policy options being development of a standardized nutrition program and the use of school gardens or farm field trips as an adjunct to in class education. Policy options regarding nutritious meals and competitive food options in school were also considered.

Although our original focus was on food options available in secondary schools, we determined that this issue was already being partly addressed by the implementation of the Healthy, Hunger-Free Kids Act, which applies nutritional standards to all competitive foods sold in schools. Focusing on nutrition education was more relevant to our target population, and relied on increasing students personal knowledge and empowering them to make better nutritional choices, rather than just changing the options available. In addition, several sources of funding already exist that can potentially fund the development of a nutrition education program making it an efficient choice. It also has the potential to have long term impacts in reducing health-care costs, and using school gardens as part of the education program creates a
dual purpose infrastructure which assists the school in providing healthy foods Wyoming students.

After examining the evidence and evaluating the various policy options, the following policy was decided on:

*All students in secondary schools in the state of Wyoming will have at least 80 minutes of nutrition education per week co-taught by school nurses and classroom teachers that address the common core standards in health and nutrition education. Under this policy, all students will be proficient, skilled or excellent when meeting the common core standards for nutrition and health education and will be able to apply this education to real world scenarios.*

Figure 2: Proposed solutions for increasing nutrition education

**Strengthening individual knowledge and skills** of secondary-school students, school teachers, and school nurses through the provision of nutritional education that are student-centered, clear, focused and consistent to increase their nutrition competency. Also, it is critical to engage
students in 50 hours of nutrition and eating behavior education per year equivalent to 80 minutes per week.

**Promoting community education** through a weekly newsletter distribution and use of social media. By promoting community awareness of the nutrition education in schools increased participation can take place to achieve the common goal of getting secondary school age children to select healthier and more nutritious options.

**Educating providers** through training and by facilitating standardized and didactic educational materials, as well as leadership tools.

Currently, nutrition education is not widely promoted in the training of health care professionals, nor in continuing education of practicing clinicians (Kris-Etherton, 2014). The Institute of Medicine (2005) recommends that certifying entities and training organizations provide adequate education related to obesity risks and prevention to health care professionals.

**Fostering Coalitions and networks** among the students, the schools, the community, and the government will enhance participation in the school meals program, and promote consumption of healthy food which in turn improves nutrition, reduces hunger, and prevents obesity and obesity-related diseases.

**Changing organizational practices** by involving school nurses in providing nutritional education. This would require school nurses to take a more active and collaborative role in the planning and teaching of nutritional education in the classroom. Not only would the school districts save money as they would not have to hire a school nurse and a health educator, but the nurse could foster collaboration with community physicians and nurse practitioners, as well.
**Influencing policy and legislation** by working with state officials and organizations. Evidence supports working with state officials and organizations such as First Lady Mead and the Wyoming School Nutrition Association to implement and improve nutrition education. By working with the Wyoming Nursing Association, more effective ways can be developed to educate children and their families in schools, homes, and local organizations. Evidence also indicates the community’s desire to change the direction of children's health at the parental, educational, and political levels. When parties at all levels are engaged, it is possible to meet the program’s goals, as evidenced by the schools of Bozeman, Montana (CDC, 2013).

**Projected Outcomes**

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<tr>
<th>Projected Outcomes with Policy Interventions</th>
<th>Possible Outcomes without Policy Intervention</th>
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<td><strong>Strengthening individual knowledge and skills</strong></td>
<td>Lack of individual understanding on nutrition, healthy eating habits and the benefits of healthy living.</td>
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<td>● Student-centered approach involving classroom teachers, school nurses, and students to improve knowledge and nutrition competency (Environmental and Human Health, Inc, 2004)</td>
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<tr>
<td>● Engage students in 50 hours of nutrition and eating behavior education per year equivalent to 80 minutes per week (Surgeon General, 2001)</td>
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<td>● Implementation of nutrition education along</td>
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with the sale of highly nutritious foods in schools - increasing the likelihood students are able to reap curriculum benefits (Environmental and Human Health, Inc, 2004)

| Promoting Community Education |  | Lack of community support on the policy and healthy eating habits |
|-------------------------------|  | Increased obesity rates |
| ● By increasing nutrition education to children, students will be able to make healthier choices. | ● Students will better understand why they are taking in certain foods and the importance of having a balanced diet. | ● Increased hypertension rates |
| ● Students will better understand why they are taking in certain foods and the importance of having a balanced diet. | ● Will make learning about nutrition a less tedious task and more enjoyable for the students. | ● Increased diabetes rates |
| ● Will make learning about nutrition a less tedious task and more enjoyable for the students. | ● Allow students to share the information with their families. | ● Increased healthcare spending |
| ● Allow students to share the information with their families. | ● Better secondary school nutrition programs will help the community as a whole to decrease the current obesity rate of 10.7% (Robert Wood Johnson Foundation, 2014). | ● Decrease in overall public health |

| Educating |  | Students throughout the state will receive |
|-----------|  |  |
| ● Implement a standardization of educational nutrition materials to be available to school- |  |  |
| Providers | based practitioners and teachers.  
- School-based providers will serve as leaders in dispersing age-appropriate nutrition materials and tailoring information to the school’s specific health needs.  
- Schools-based providers will adopt multi-component interventions for a minimum of 50 hours - classroom nutrition education, self-assessment of food choices through 24-hour food recall, computer-based games, and active peer participation.  
- School-based practitioners will evaluate and address specific health needs of the student body. | inconsistent nutritional information.  
- School-teachers and practitioners will not have the appropriate knowledge or training.  
- Students will not have the educational tools to make better food choices. |
| --- | --- | --- |
| Fostering Coalitions and Networks | “Trust lands,” currently managed by the USDA Forest Service and the Bureau of Land Management will be leased to local farmers at a discounted rate, when contracted with the school districts to produce fresh fruits and vegetables at a discounted rate.  
- The local economy will be bolstered from the collaborative efforts between the student body, Without collaborations and support from different agencies and the community, including students and parents:  
- Policy may not be financially sustainable.  
- Students may experience conflicting messages about |
school district and local providers.

- Integration of resources that already exist within communities will ensure costs remain low. This includes, but is not limited to: donations of items and funds from local businesses, used gardening tools from parents and families, and continued communication through inexpensive outlets such as newsletters.

- Utilization of centralized organizations such as the Wyoming School Nutrition Association and local school-boards that already have established relationships with state legislators.

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<th>Changing Organizational Practices</th>
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<td>• Enacting practice changes in local school districts to limit competitive foods, increasing the use of local produce, and beginning edible school gardens could have a significant impact on adolescent health.</td>
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<td>• Edible school gardens strengthen children’s and community members knowledge of and attitude towards food, agriculture and the environment; increase active participation in</td>
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<th>Without infrastructure and policy to support nutritional education:</th>
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<tbody>
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<td>• Lack of participation.</td>
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<td>• Confusion on how to implement the policy.</td>
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the garden-to-plate process; and benefit the school budget.

- Ten schools (elementary, middle, and high schools) have implemented school garden programs (Wyoming Farmers Market, 2015). As of 2012, 38% of school districts in Wyoming are conducting student field trips to farms, 13% are holding taste tests/demos of locally produced food, and 13% are serving products from school-based gardens or farms (USDA, 2012). The goal is to increase these numbers.

- In summer 2015, Wyoming Farm to School Community Advocate Train the Trainer Workshops are being held to encourage more schools to adopt the Farm to School model.

- Limiting competitive foods has minimal impact on revenues from food, as most schools make a significant amount of money from competitive foods are in districts which already receive minimal income from school lunch subsidies and most losses can be offset by increased participation in federal
subsidized meals (Guthrie et al., 2013).
Changing these practices at a school district level has the opportunity to affect not only Wyoming's adolescents' health, but also the health of the local community.

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<th>Influencing Policy and Legislation</th>
<th>Lack of government and legal support:</th>
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<td>• Implementation of school gardens will help increase nutritional knowledge as a whole.</td>
<td>• Lack of participation</td>
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<td>• The ultimate goal for school gardens is to increase awareness of where food comes from, and allows children to be active participants in the entire process from seed to plate.</td>
<td>• No incentives for participation.</td>
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<td>• Through the process they are provided with numerous nutrition education opportunities and thereby become more familiar with and attracted to healthier foods with the foundation of knowledge of why they are better for them.</td>
<td>• No penalties for non-participants.</td>
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<td>• Wyoming schools will also establish relationships with Dept. of Agriculture, Wyoming Dept. of Education, and Dept. of Health to ensure policy implementation and regulation.</td>
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Strategies for Adoption, Implementation and Infrastructure Development

Strengthening Individual Knowledge and Skills

- Increase nutrition education from 6 hours a year to 50 hours a year by incorporating nutrition education with Common Core standards and cooking demonstrations in school cafeterias. The U.S. DOE recommends that schools provide at least 50 hours of nutrition education per year in order to impact children's eating behavior, which correlates to 80 minutes of nutrition education per week (Environmental and Human Health, Inc, 2004).

- Research has shown that nutrition education programs that focus on influencing students’ eating behaviors are much more likely to be effective than programs that use the traditional fact-based approach (Surgeon General, 2001).

- Nutrition education is more effective when it is part of the curriculum, and when the nutrition information taught in the curriculum is reflected by the nutrition messages seen within the school, including the school cafeteria (Trioano, 1998).

Community Education

- Distribute weekly newsletters to parents and the community about what students are learning.

- A 22-year long study conducted in agricultural towns in Northern France evaluated effects of school-based nutrition education programs on the eating habits of the whole family. The results showed a significant decrease in mean BMI, indicating that the rate of obesity could be decreased through the use of community education (Romon et al, 2009).
Community education can also be implemented through the use of social media. A scholarly-based systematic review analyzed how social marketing impacts the nutritional choices of the public. Ten out of eighteen studies showed that social marketing, through models such as peer-rewarding, has a positive effect on an individual’s intake of healthy foods (Gordon et al, 2006).

**Educating Providers**

- Provide day-long training programs to teach cognitive behavioral therapy for individual interventions and leadership skills to implement school-wide interventions that will utilize multimedia tools, student leaders, and coordinated care.

- Provide continuing education programs for school-based health providers on nutrition to maintain licensure. Providers will be equipped to serve as leaders in tailoring appropriate nutrition materials to address the health needs of the school.

- School health providers will be given tools and didactic material to implement interventions, such as lectures and group discussions, specifically designed to engage and educate students. The program will cover: determining healthy food choices, healthy food alternatives, and basic nutrition requirements; as specified by CDC and federal recommendations.

- All nutrition educational materials and interventions will use comprehensive, coordinated interventions that involve the family and use multimedia tools, to ensure lasting success (Roseman et al, 2011).

**Fostering Coalitions and Networks**
Fostering a coalition between the USDA, Wyoming Department of Agriculture, Wyoming DOE, and Wyoming Department of Health will contribute to the effectiveness and success of the implementation of this policy.

Students, teachers, and parents can participate through the Alliance for a Healthier Generation (AHG) website. Each school forms a “team”, which consists of “fans” like parents, and “team members” like teachers and faculty. Based on the assessment tool, AHG points out areas of weakness, and suggests ways to improve in each area. Interested parties from the school can then create an action plan online, which includes implementation strategies, examples, and resources (AHG 2015).

Designate a Certified Educator to ensure palatable food based on Hazard Analysis and Critical Control Point (HACCP) principles.

Provide incentives to schools, either through monetary reimbursements or free food, to increase participation in USDA’s Farm to School program.

Incentivize local farmers and producers to sell products to schools at discounted rates through grants, monetary reimbursement, tax credits or deductions, or through the provision of trust lands for farming.

Changing Organizational Practices

Enact edible school gardens in all of Wyoming school districts and plan menu choices consistent with seasonal availability of fresh and minimally processed whole foods.

Prohibit the advertisements of unhealthy food options and replace such advertisements with healthier brands or fruits and vegetables.
• Charge more for competitive foods that do not comply with the Healthy, Hunger-Free Kids Act to support school breakfast and lunch programs.

• Develop and maintain the infrastructure being created by the policy to support a healthier school environment.

Influencing Policy and Legislation

• Involve state officials and organizations like the Wyoming School Nutrition Association to ensure that content sold in vending machines comply with National School Lunch Program policies.

• For every year the policy remains in place, a school will qualify for an additional 1% increase in their annual discretionary fund. Conversely, if the policy is not implemented or full compliance is not met for two consecutive years, a 0.5% deduction from discretionary funding will occur.

Funding

We will pursue expansion of existing funding sources as well as currently untapped resources as follows:

• **Food and Agricultural Science Enhancement (FASE)**

  Wyoming is eligible for funding under the FASE grants as part of the USDA Experimental Program to Stimulate Competitive Research (EPSCoR). Funding from this grant, which has provided up to $990,000 to universities in collaboration with their states, will support the nutrition education programs

• **School Food Service (SFS) Account**
The School Food Authority (SFA) funds from the nonprofit SFS account can be utilized to support the school nutrition program providing school garden supplies. Produce from gardens can be used in reimbursable meals or sold a la carte. Revenue will accrue back to the SFS account and help maintain the school garden programs.

- **Tax Revenue**
  
  Tax on less nutritious foods sold in schools can be implemented and used to supplement more nutritious foods. A percentage of other taxes from amusement, tobacco, alcohol, and utility sales can be allocated for the proposed program. Additionally, a greater portion of the $23 million in severance tax from mining (2010 amount) can be implemented.

- **Lotto**
  
  The first $6 million of the *WyoLotto* lottery’s net proceeds goes to the state treasury and anything over that goes into a state fund for education, but a greater portion of the proceeds could be secured for school nutrition education.

- **National School Lunch Program (NSLP)**
  
  Under Food and Nutrition Service (FNS), participating schools receive monetary subsidies and USDA foods for each free or discounted meal they serve meeting federal requirements set by the latest Dietary Guidelines for Americans.

- **Fresh Fruit and Vegetable Program (FFVP)**
  
  The FFVP operated by the Food and Nutrition Service (FNS) reimburses elementary schools $50-$75 per student per school year for purchase of fresh fruits and vegetables to offer to the students for free during the school day.
DoD Fresh Program

The US Department of Defense’s DoD Fresh Program permits schools to utilize USDA Foods entitlement dollars to purchase fresh produce.

Measures for future evaluation

We will evaluate the success of our program using the Student Health Index (SHI): Self-Assessment & Planning Guide 2014. The SHI, developed by the Centers for Disease Control and Prevention (CDC), is a self-assessment and planning tool that schools can use to improve their health and safety policies and programs. It’s easy to use and completely confidential. The SHI enables individual schools to identify the strengths and weaknesses of their own programs and develop a tailored action plan for improving student health. The SHI engages teachers, parents, students, and the community in promoting health-enhancing behaviors and better health.

We will use the SHI to evaluate the outcomes of our policy and determine its effectiveness. We will evaluate each of the individual health indicators that our policy strives to improve, including: the percentage of the population eating enough fruits and vegetables; the nutritional value of food sold by schools; adolescent obesity rates; and other health indicators such as tobacco use and exercise.

Conclusion

There is a growing issue of overweight high school students in state of Wyoming. An immediate response is needed not only to halt its further progression but also to decrease the adverse effects of obesity and its long-term consequences on health. One of the main issues contributing to the
steady rise of obesity is associated with most schools selling non-nutritious foods. These institutions have staff such as teachers and school nurses as well as untapped available funding that can be utilized to help stop the obesity epidemic from growing among secondary school students in Wyoming. These resources can be used for nutrition education and school garden projects to provide students with more nutritious food options while also improving health promotion and academic skills in secondary schools. It is imperative that the Wyoming state legislature take into account our proposed policy of 80 minutes of nutrition education per week. Applying these measures can aid in reducing the amount of health care costs and spending. The points stated within this document address and confront the issue at hand and can lead to a safer and healthier future for our children.
References


Wechsler H, McKenna ML, Lee SM, Dietz WH. The Role of Schools in Preventing Childhood Obesity. State Education Standard. 2004;5:4–12
