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An Analysis of the State Nutrition Policies in the United States

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AN ANALYSIS OF THE STATE NUTRITION POLICIES IN THE UNITED STATES

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Submitted in Partial Fulfillment of
the Requirements for the Degree of
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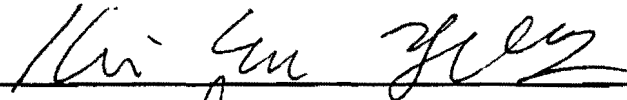
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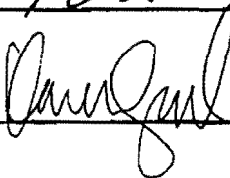
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ABSTRACT

Childhood obesity is an epidemic in The United States. According to the most recent data provided by The Center for Disease Control and Prevention, childhood obesity has more than tripled over the past 30 years. In 1980, 7% of children aged 6-11 years were obese; that has increased to almost 20% in 2008. Five percent of adolescents aged 12-19 years were obese in 1980; that increased to 18% in 2008.

Obese children are at a greater risk for immediate and long-term effects on their health. Immediate health effects include risk factors for cardiovascular disease, a high level of risk for prediabetes, which can develop into diabetes, and a greater risk for bone and joint problems, sleep apnea, and emotional problems due to stigmatization and poor self-esteem. According to *The Surgeon General's Vision for a Healthy and Fit Nation*, children and adolescents who are obese are likely to become obese adults. That puts them at a high risk for contracting adult health problems such as heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis. Overweight and obesity are associated with increased risk for many types of cancer, including cancer of the breast, colon, endometrium, esophagus, kidney, pancreas, gall bladder, thyroid, ovary, cervix, prostate, multiple myeloma, and Hodgkin's lymphoma.

Schools used to be able to make nutrition decisions with little or no interference at the federal level. Now the government is regulating school nutrition by requiring each state to adopt a local school wellness policy and changing school breakfast and lunch menus.

The purposes of the study are to summarize and analyze each state's compliance with current nutrition policy and best practices, defined as (1) the recommended

components for effective nutrition policy in existing research, and (2) the proposed breakfast and lunch school meal pattern changes based on the 2010 USDA Dietary Guidelines for the school breakfast and lunch programs (*Dietary Guidelines for Americans*, 2010). The study also creates a by state compliance baseline for future researchers to use to measure the speed and magnitude of compliance changes.

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I thank Dr. Christopher H. Tienken, who worked with me from the initial brainstorming sessions to endless rewrites and revisions, ultimately culminating with this final copy.

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I would be remiss if I did not thank R. C. You were my cheerleader, supporter, motivator, and in the end, closer. If our paths had not crossed, I would still be writing and researching without an end in sight.

DEDICATION

I dedicate this dissertation to my husband, Rick, and my children, Zachary, Christian, Victoria, and Wyatt. It certainly has been “a long and winding road.” Going back to the beginning, I am indebted to my babysitter, Christina, who lovingly cared for my children two nights a week while I trekked from Phillipsburg to South Orange, to attend classes, and my mom, who babysat her grandchildren, made dinner, helped with homework, and was my steady rock in times of turmoil.

While this has been a long time coming, it is finally here. Let us all raise a glass and cheer.

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Chapter 1

INTRODUCTION

Childhood obesity has become a national epidemic. “Between 1976-1980 and 1988-1994 the percentage of U.S. adolescents (aged 12-19) who were overweight increased from 5.4% to 9.7% for girls and increased from 4.5% to 11.3% for boys. The increase for young children (aged 6-11) for the same period was 6.4% to 11.0% for girls and 5.5% to 11.8% for boys” (U.S. Department of Health and Human Services, 2000, p. 11).

The most recent statistics from The Center for Disease Control and Prevention (CDC) state that in 1999-2002, 15% of U.S. children aged six through 11 were obese. In addition, more than 16% of young people ages 12 through 19 were overweight, and another 15% of school-age children were at risk of becoming overweight. According to a report from the Institute of Medicine (IOM) in 2004, approximately nine million children over six years of age were obese.

Children spend much of their time in school. As a result, schools are key players in promoting healthy nutrition habits for children. “Schools are well positioned to play an important role in fighting childhood obesity. It has been argued that schools can play this role by altering various policies and practices” (Shek, 2004, as cited in Longley, 2009, p. 95).

Over 100 years ago, society realized that the school environment was an effective means to help feed children living in poverty. In the early 1900s before concerns about childhood obesity emerged, many cities took care of their hungry by providing school meals. With no government support, communities relied on philanthropy, school boards, and individuals for donations (Stitzel, 2004).

During the 1930s, states and municipalities contributed to school lunch programs, but it was not enough to abate the increasing hunger among schoolchildren. As a result, in 1935, the federal government became involved in feeding hungry children lunch at school. Section 32 of the Agricultural Act provided donations of commodities to schools to help feed the children. In 1936, PL 74-320 was passed to cover the cost of labor to prepare and serve school lunches. In 1943, PL 78-129 covered the cost of purchasing United States Department of Agriculture (USDA) commodities served in schools.

The federal government expanded its involvement in school lunch legislation in 1946 when President Harry S. Truman signed the National School Lunch Act (NSLA). The National School Lunch Program (NSLP) is a result of this. This Act was distributive in policy because it began as a grant aid to states, offering all states a maximum of nine cents per meal reimbursement on three meal options introduced by the NSLA.

Type A was a complete lunch designed to meet one-third to one-half of the minimum daily nutritional requirements for a 10 to 12 year old. It included $\frac{1}{2}$ pint of whole milk, 2 ounces of a protein-rich food, $\frac{1}{2}$ cup of cooked peas or beans, 4 tablespoons of peanut butter, one egg, $\frac{3}{4}$ cup of vegetables, fruits, or both, 1 portion of grain, and 2 teaspoons of butter or fortified margarine. Type B lunch was similar to the A lunch, but designed for schools that did not have the facilities to prepare a Type A lunch. It included 2 pints of whole milk, 1 ounce of a protein-rich food, $\frac{1}{4}$ cup of cooked peas or beans, 2 tablespoons of peanut butter, $\frac{1}{2}$ an egg, $\frac{1}{2}$ cup of vegetables, fruits, or both, 1 portion of a grain, and 1 teaspoon of butter or fortified margarine. The Type C category was $\frac{1}{2}$ pint of milk. Maximum reimbursements permitted were 9 cents for Type A, 6 cents for Type B, and 2 cents for Type C. If a lunch was served without milk, the

reimbursement decreased by 2 cents. (School Lunch Program History, 2010) Fowler (2009) defines distributive policy as giving people gifts such as goods, services, or special privileges. Federal funding for school lunches decreased in 1958. As a result, the Type B meal was dropped from federal reimbursement, and the per meal reimbursement decreased from nine cents to four cents. In 1962, PL 87-823 amended the NSLA and changed funding from grant aid to states to a guaranteed meal reimbursement from the federal government; it further stipulated that lower income schools would receive more funding for school meals.

Additional federal legislation to aid in feeding children lunch at school was the Child Nutrition Act (CNA) of 1966. This Act, signed into law by President Lyndon B. Johnson, included six major points:

1. Created a two-year pilot School Breakfast Program (SBP)
2. Extended the Special Milk Program through 1970
3. Established a food service equipment assistant program
4. Authorized state and administrative expenses (SAE)
5. Authorized the nutrition education and training program (NET)
6. Increased funding for needy children's' meals

In 1975, the SBP became permanent. In order for states to receive federal distributions (reimbursements) for breakfast and lunch served at schools, they had to meet the requirements of the NSLP and SBP. Over the next 30 years, the federal government increased its distributive involvement in school lunch and child nutrition policy. In the early 1980s, The Omnibus Reconciliation Act reduced funding to school

lunch programs; but in 1986, Child Nutrition Reauthorization increased reimbursement rates for school lunch programs (Stitzel, 2004).

In the early 1990s, federal involvement in school meals began to change from being distributive to regulatory. In 1993, the USDA published a “School Nutrition Dietary Assessment” that stated school lunches were too high in fat, cholesterol, and sodium. (SNDA-I report, 1993) In 1994, Congress passed The Healthy Meals for Healthy Americans Act (PL 103-448). This Act required improved nutritional quality of school meals and required school lunches to be consistent with the USDA Dietary Guidelines. “The Dietary Guidelines reflect the current science-based consensus on proper nutrition, a vital element in promoting health and preventing chronic disease, and provide the nutritional basis for federal domestic nutrition assistance programs such as the NSLP and SBP” (USDA, 2011, p.2495). In 1994, the USDA established the Team Nutrition and Healthy Meals Initiative. This mandate established nutrition standards for school meals and required an increase in nutrition education for children. It is at this time that the federal government’s involvement in school meals changed from simply distributing monies to regulating behavior.

Fowler (2009) defines regulatory policies as rules affecting people. The government enforces the rules and penalizes those who break them. The purpose of a regulatory policy is to require or prohibit certain behaviors. Lowi and Ginsberg (1994) categorize many federal grant programs as regulatory instead of distributive because they include complicated restrictions that the recipients must follow in order to obtain the funding. Many programs providing educational aid are regulatory; for example, the No Child Left Behind Act of 2001 (NCLB) give schools more flexibility on how to spend federal funds

but also increases school, district, and state accountability for low performance. The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA) also increases federal funds for early intervention for students who do not need special education or related services. Most recent is the upcoming revision of NCLB, the Elementary and Secondary Education Act (ESEA). ESEA keeps some of NCLB laws, but changes include eliminating the adequate yearly progress (AYP) statute, redirecting federal involvement in failing schools to include only the lowest performing five percent of schools, and providing a series of federal interventions for turning around the lowest performing schools based on the School Improvement Grant Program (Klein, 2011).

Earlier attempts to regulate nutrition began with a release of several governmental reports. In 1996, Acting Surgeon General Audrey F. Manley released the first report of the Surgeon General on physical activity and health, titled *Physical Activity and Health* (USDHHS, 1996). It was a comprehensive review of the research on physical activity and health. In the fall of 2000, a government task force published *Promoting Better Health for Young People through Physical Activity and Sports* (USDHHS, 2000). The report urged the government and the public to study physical activity in young people and identify it as a national priority. Following *Promoting Better Health for Young People through Physical Activity and Sports*, the Surgeon General released another report in 2001, titled *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity* (USDHHS, 2001). In the Foreword of this report, Surgeon General David Satcher stated, "Overweight and obesity may not be infectious diseases, but they have reached epidemic proportions in the United States" (p. xiii).

Heeding recommendations from the USDA, the Surgeon General, and the IOM, the federal government has taken a position on improving the health and nutrition of America's children. As a result, the Child Nutrition Act and WIC Reauthorization Act of 2004 (P.L. 108-265) mandates the establishment of local wellness policies. Under this law, any local education agency (LEA) participating in the Richard B. Russell National School Lunch Act, (NSLA) or the CNA of 1966 must establish a local school wellness policy by the beginning of the 2006-2007 school year.

The minimum requirements of the policy are as follows:

1. Include goals for nutrition education, physical activity, and other school based activities that are designed to promote student wellness in a matter that the LEA determines appropriate
2. Include nutrition guidelines selected by the LEA for all foods available on each school campus under the LEA during the school day with the objectives of promoting student health and reducing childhood obesity
3. Provide assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture pursuant to Subsections (a) and (b) of Section 10 of the Child Nutrition Act (42 U.S.C. 1779) and Section 9(f)(1) and 17 (a) of the Richard B. Russell National School Lunch Act (42 U.S.C.1758(f)(1), 1766(a)O), as those regulations and guidance apply to schools
4. Establish a plan for measuring implementation of the local wellness policy, including designation of one or more persons within the LEA or at each school, as

appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy

5. Involve parents, students, and representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy

Building upon P.L. 108-265, on December 2, 2010, the U.S. House of Representatives passed The Healthy, Hunger-Free Kids Act (HHFKA). President Obama signed this into law on December 13, 2010. This law, known as P.L. 111-296, reauthorizes child nutrition programs for five years. It sets nutritional standards for all food offered anywhere on a school campus. It goes beyond previous child nutrition laws because the nutritional standards do not apply only to federally funded school breakfast and lunch programs, but to food served a la carte, in vending machines, and school stores. According to a White House press release, this legislation includes three parts: (1) improves nutrition and focuses on reducing childhood obesity, (2) increases access to school meal programs, and (3) increases program monitoring and integrity (*Nutrition Fact Sheet*, 2010). In accordance with P.L. 111-296, the USDA issued a proposed rule based on recommendations released by the IOM to update the current meal patterns for the NSLP/SBP and make them consistent with the *2005 Dietary Guidelines for Americans* (USDA, 2011). The changes include requiring schools to offer more fruits, vegetables, and whole grains. Schools would be required to offer only fat-free or low-fat fluid milk; they would have to reduce the sodium content of school meals, control saturated fat and calorie levels; and minimize trans-fat. The purpose of these changes is

to provide nutrient-rich school meals that also supply appropriate calorie levels. Once the proposed rule is published, the USDA has 18 months to issue an implementing rule.

In the near future, states, and ultimately local school districts, will have to revamp their breakfast and lunch nutrition standards to be in agreement with P.L. 111-296 or the HHFKA of 2010. Anticipating the impending changes, some states have already changed their meal patterns to accommodate some of the new recommendations, but many have not.

Statement of the Problem

P. L. 108-265 requires any LEA participating in a program authorized by the NSLA or CNA to establish a local school wellness policy. This is a federal law placing mandates on local schools. Local schools are under the governance of state departments of education. In order to comply with P. L. 108-265, a state can either institute a state wellness policy or mandate that each school district adopt a wellness policy. Either way, the result is a hodgepodge of wellness policies. The purpose of the federal law is to utilize school breakfast and lunch programs as a means of improving childhood nutrition and ultimately decreasing the percentage of American children who are overweight and obese. Nutrition and nutrition guidelines are one aspect of wellness. How can the states contribute to a national goal when there is no common framework for evaluating effective nutrition policy?

P.L. 111-296 requires the USDA to establish nutrition standards for all food sold and served in schools at any time during the school day. So far, the USDA has issued a proposed rule changing the nutrition standards of school breakfasts and lunches. This rule would require schools to provide meals that are more nutritious. As a result, children

will be eating healthier and improving their overall health. This contributes to the national goal of decreasing the percentage of American children who are overweight and obese.

Schools used to be able to make nutrition decisions with little or no interference at the federal level. Now the government is regulating school nutrition by requiring each state to adopt a local school wellness policy and changing school breakfast and lunch menus. Based on the government's most recent regulatory actions, I theorize that this involvement will continue and increase in intensity.

Purpose of the Study

The purpose of the study is to summarize and analyze each state's compliance with current nutrition policy and best practices, defined as (1) the recommended components for effective nutrition policy in existing research and (2) the proposed breakfast and lunch school meal pattern changes based on the 2010 USDA Dietary Guidelines for the school breakfast and lunch programs (*Dietary Guidelines for Americans*, 2010). In addition, the study creates a by-state compliance baseline for future researchers to measure the speed and magnitude of compliance changes.

Research Questions

1. How does each state's nutrition policy match the recommended components for effective nutrition policy found in the existing research?
2. How compliant are each state's school breakfast and lunch nutritional standards with the USDA's proposed changes of nutritional standards for school breakfast and lunch meals?

Significance of the Study

When the government wants to control a harmful behavior, it frequently uses a regulatory technique (Lowi & Ginsberg, 1994). The government deemed childhood obesity a harmful behavior; therefore, it passed P.L. 108-265. This law requires all public school districts to establish a school wellness policy. Since state departments of education regulate school districts, the action must first come from the state level, then trickle down to the local level. This results in a variety of interpretations and lack of consistency. Keeping in mind the big picture, decreasing the percentage of overweight and obese children in America, it would be beneficial if all the states aligned to the same guidelines. I conducted a cross-state comparison of each state's nutrition policies to the components of effective nutrition policy found in the existing research.

P.L. 111-296 intended to improve nutrition and focus on reducing childhood obesity. A result of the law is a USDA proposal that significantly changes the current breakfast and lunch meal patterns. In an effort to provide the states with a preview on meal pattern changes, I analyzed each state's current nutritional standards against the new nutritional standards. This will provide information to help the states modify their current meal patterns to comply with the new patterns.

In the history of research, quantitative evaluation has always been considered as more valid and legitimate than its counterpart, qualitative evaluation, has. Quantitative evaluation uses statistics to describe phenomena, involves a structured experiment controlled by the researcher, employs deductive logic, and validates explanations. Qualitative evaluation, on the other hand, uses verbal descriptions to portray a

phenomenon, consists of unstructured interviews, employs inductive logic to find an explanation, and develops an explanation for a perceived relationship (Krathwohl, 1998).

In the twenty-first century, qualitative evaluative methods have become more respected and authenticated. Despite the limitations of qualitative research, I have selected this method to complete my study.

Limitations

1. Research quality is heavily dependent on the individual skills of the researcher and more easily influenced by the researcher's personal biases and idiosyncrasies.
2. Rigor is more difficult to maintain, assess, and demonstrate.
3. The volume of data makes analysis and interpretation time consuming.
4. It is sometimes not as well understood and accepted as quantitative research within the scientific community.
5. Findings can be more difficult and time consuming to characterize in a visual way.

(http://www.medscape.com/viewarticle/731165_3)

Delimitations

1. While the federal mandate stipulates five minimum requirements for local wellness policy, this study refers to the second requirement because it is specific to guidelines for school meal nutrition.
2. Wellness is comprehensive, with many components. Research areas include not only nutrition, but physical activity, education, and public awareness. As a result, states have numerous policies addressing various issues. This study specifically focuses on school meal nutrition standards since the federal government has the authority to regulate school breakfast and lunch programs.

3. State nutrition policy development and execution is ongoing. The most current state policies available were used for this study, but that does not account for individual amendments that are currently in legislation for consideration.
4. State policy greatly varies. For the purpose of this research, only state policy in the field of nutrition guidelines for school breakfast and lunch programs was considered.
5. State legislation changes yearly. For the purpose of this research, state legislative changes are incorporated through July 2011.

Design and Methods

This study is a qualitative approach with the purpose of evaluation. According to Leedy (2005), a researcher chooses the purpose of evaluation to “judge the effectiveness of particular policies, practices, or innovations” (p. 135). I used content analysis. Content analysis, as defined by Leedy (2005), “is a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes, or biases” (p. 142). The data analysis is quantitative as well because I used tabulations and statistical analyses to interpret the data as I reflected on the problem under investigation (Leedy,2005).

Definitions of Terms

At Risk of Becoming Overweight (relating to children and adolescents aged 2-19 years)--
A BMI below the 85th percentile but greater than the 75th percentile for the same age and sex

BMI -- Body Mass Index (relating to children and adolescents aged 2-19 years) --

Calculated using a child’s weight and height

CDC-- Center for Disease Control and Prevention -- The major operating component of the Department of Health and Human Services. Its mission is to collaborate to create the expertise, information, and tools that people and communities need to protect their health through promotion of health; prevention of disease, injury, and disability; and preparedness for new health threats

Commodity -- An agricultural raw material produced in the United States

DGA -- Dietary Guidelines for Americans

Distributive Policy -- A government effort to distribute a good or benefit to some portion of the population, often in an effort to solve public problems

FNS -- Food and Nutrition Service --Administers the nutrition assistance programs of the USDA

Group A Commodity -- Perishable items such as beef, pork, fish, poultry, egg products, fruits, and vegetables

Group B Commodity -- Non-perishable items such as cereals, grains, peanut products, dairy products, and oils

IOM -- Institute of Medicine -- An independent, nonprofit organization that works outside the government to provide unbiased and authoritative advice to decision makers and the public

LEA -- Local Education Agency

NSLA -- National School Lunch Act

NSLP -- National School Lunch Program

Obese, Obesity -- (relating to children and adolescents aged 2-19 years) --
A BMI at or above the 95th percentile for children of the same age and sex

Overweight – (relating to children and adolescents aged 2-19 years) -- A BMI at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex

Regulatory Policy -- A government effort to regulate a behavior. Applies to a large group of people

SBP -- School Breakfast Program

Organization of the Study

Chapter 1 provides the context of the study, including relevant background, problem statement, guiding questions, purpose and significance of the study, research questions, limitations, delimitations, and design and methods.

Chapter 2 includes a review of the theory/ideology, research, and literature that constitute a foundation for the policy analysis herein. The theory/ideology, research, and literature include an exploration of the issue of school nutrition policy, the definition and history of federal involvement in nutrition, proponent and opponent views of current state nutrition policies, comparative studies of state school nutrition policies, the federal mandate and frameworks for policy analysis of a nutrition policy.

Chapter 3 presents details of the research design and methods.

Chapter 4 provides the cross-state analysis of each state's nutrition guidelines component of state wellness policies and the cross-state analysis of each state's current meal patterns in response to the USDA's proposed meal pattern changes.

Chapter 5 presents a summary, discussion of the findings, conclusions based on the data, and recommendations for future research, practice, and policy.

Chapter 2

REVIEW OF LITERATURE

In order to analyze federal and state nutrition policies, it is necessary to visit the individual factors that influence nutrition policy design and where it will end up in the future. Five separate threads are woven together to create one tapestry referred to as “State Nutrition Policies”: (1) early community intervention, (2) government involvement in nutrition, (3) federal and state nutrition legislation, (4) definition of childhood obesity, and (5) the role of schools in decreasing childhood obesity. I reviewed the literature dealing with each factor and synthesized how each relates to federal legislation mandating all states to adopt nutrition policies by the 2006-2007 school year.

Early Community Intervention

In the early 1900s, before federal food programs, many cities were taking care of their hungry. They provided children free school meals. There was no government support; therefore, communities relied on philanthropy, school boards, and donations (Stitzel, 2004). In the 1920s and 1930s, social agencies and parent-teacher associations fed hungry schoolchildren (Frank, 1987).

During the 1930s, states and municipalities stepped in, but it was not enough to abate increasing hunger among schoolchildren. At the same time, America was in severe economic and agricultural crises (Frank, 1987). As World War II ensued, the military rejected men because of poor health and nutrition. Congress finally recognized that poor nutrition was a problem for the American people (Frank, 1987). American farmers were struggling due to the food surpluses (high supply) and low demand. Job losses meant

people were unable to buy food or support a family. These factors resulted in widespread malnutrition. The 1930s were a pivotal time in American history, as the government first became involved in nutrition.

Government Involvement in Nutrition

The government began its involvement in nutrition with the establishment of The Commodity Credit Corporation Charter Act of 1933. This Act established The Commodity Credit Corporation (CCC), whose purpose was to financially assist farmers and help them store non-perishable commodities until prices rose (USDA, *History of the Food Distribution Programs*). When prices failed to rise, farmers exchanged crops for payment on their loans; the government had to sell or distribute the surplus commodities before they spoiled.

Congress' solution was P.L. 74-320, The Agriculture Act of 1935. Specifically, Section 32 of this Act gave the Department of Agriculture 30% of the duties collected from the farmers via The CCC. The Secretary of Agriculture put these sums in a separate fund used specifically to encourage the domestic consumption of surplus agricultural commodities (USDA, *History of the Food Distribution Programs*). In addition to using up surplus commodities, the object of this legislation was to remove price-depressing surplus foods from the market through government purchase and dispose of them through exports and domestic donations to consumers in such a way as not to interfere with normal sales.

Since the purpose of this legislation was to get rid of surplus, but “not interfere with normal sales” (USDA, *History of the Food Distribution Programs*, p. 2), the U.S. Department of Agriculture (USDA) had to create a specific category of eligible

recipients. Section 32 of The Agriculture Act of 1935 identifies participants in federal domestic food programs as those eligible to receive commodity donations, (and later, federal monies). These participants included school lunch programs, nonprofit summer camps for children, charities, and families in need (USDA, *History of the Food Distribution Programs*).

During World War II, difficulty in transportation and a shortage of food forced Congress to use Section 32 funds. These funds financially assisted schools and childcare centers in purchasing food for their lunch programs. By 1943, states took over full administrative and financial responsibilities of the donated foods and monies (USDA, *History of the Food Distribution Programs*).

The NSLA of 1946 provides states with commodity and cash support so that they, in turn, can provide nutritious school lunches to children free or at a reduced cost. The purpose of the NSLA is twofold: (1) to provide nutritious meals to schoolchildren and (2) to support America's agriculture markets by donating surplus commodities for school lunches (USDA, 2007).

Following the NSLA of 1946, Congress passed The Agricultural Act of 1949. This Act strengthened the original Act of 1935. It gave the USDA more authority in the overseeing of basic agricultural commodities such as corn, wheat, and cotton donations and included non-basic agricultural commodities such as soybeans, sunflower seeds, honey, and milk as eligible for donation. The Act also authorized the CCC to pick up any extraneous costs associated with the procurement, utilization, and consumption of the non-basic commodities. For example, now states could purchase milled flour instead of

just wheat and cornmeal instead of just corn because the CCC paid for the extra costs (USDA, *History of the Food Distribution Programs*).

There are three legislative acts that give the USDA authority to purchase commodities for the school lunch program: (1) Section 6 of the Richard B. Russell National School Lunch Act, (2) Section 32 of the Agriculture Act of 1935, and (3) Section 416 of the Agricultural Act of 1949. All three Acts give the USDA control over nutrition. The USDA, in turn, has three agencies that share responsibility in procuring and distributing commodities. A publication by the USDA Food and Nutrition Service titled *The White Paper: USDA Commodities in the National School Lunch Program* (2007) identifies these agencies as follows:

The Food and Nutrition Service is responsible for the general oversight, regulation, and administration of domestic commodity programs. It acts as the primary liaison between the USDA and the administering state agencies. The Food and Nutrition Service calculates and tracks commodity entitlements, takes commodity orders from states, monitors the flow of commodities, and provides policy guidance on program issues.

The Farm Service Agency and the Agricultural Marketing Service act as the Food and Nutrition Service's commodity purchasing and delivery arm. These two agencies work together, in consultation with the Food and Nutrition Service, to develop commodity specifications, issue and accept commodity bids from manufacturers, purchase products, and deliver commodities to state-designated locations (p. 3).

Schools use two groups of commodities in their meal programs: Group A Commodities include perishables: beef, pork, fish, poultry, egg products, fruits and vegetables. Group B Commodities include nonperishables: cereals, grains, peanut

products, dairy products, and oils. An agency of the USDA may purchase items from these groups to limit surplus and stabilize prices (USDA, 2007).

In addition to commodities, the USDA provides states with a cash reimbursement based on the number of lunches served and family need (USDA, 2007). Today, because of cash and commodity assistance, “Over 31 million school children receive a nutritious school lunch each school day in over 100,000 participating public and private nonprofit schools and institutions” (USDA, 2007, p. 2).

Handling and disbursement of commodities was one area of early government involvement in nutrition that led to federal nutrition legislation. A second area of government involvement was the creation of dietary guidelines. As early as the late 1800s, nutrition advice based on scientific study recommended Americans what foods, and how much, they should eat to maintain a healthy lifestyle.

In Chapter 2, “Dietary Recommendations and How They Have Changed Over Time,” from the USDA publication *America’s Eating Habits: Changes and Consequences* (1999), authors Davis and Saltos provide a historical overview of the USDA guidelines:

1894 -- The first published dietary guideline by W. O. Atwater. He suggested American males eat meals based on content of protein, carbohydrate, fat, and “mineral matter.”

1916 -- The first published USDA food guide by Caroline Hunt. Five food groups were included: milk and meat, cereals, vegetables and fruits, fats and fatty foods, and sugars and sugary foods.

1917 -- Dietary recommendations by Hunt and Atwater, based on the five food groups of 1916, targeted to the public

1921 --Second published USDA food guide by Hunt using the same five food groups and suggesting amounts of foods a family should purchase weekly.

1923 -- Hunt slightly revised the 1921 publication to include households that differed from the average five-member size. (Davis and Saltos, 1999, pp. 34-35)

1941 -- The Food and Nutrition Board of the National Academy of Sciences released the first Recommended Dietary Allowances (RDAs). These allowances listed specific amounts of calories, protein, iron, calcium, vitamins A and D, thiamin, riboflavin, niacin, and ascorbic acid to be consumed daily (Davis and Saltos, 1999).

1943 -- The basic five food groups changed to the basic seven: (1) leafy or other green or yellow vegetables, (2) oranges, tomatoes, grapefruit, raw cabbage or salad greens, (3) potatoes or other vegetables or fruits, (4) milk or milk products, (5) meat, poultry, fish, eggs or legumes, (6) bread or cereals, and (7) butter or fortified margarine (Nestle, 2007). A 1946 version of the same seven groups included suggested number of servings (Davis and Saltos, 1999).

The seven-food group guide was complicated, vague, and not user-friendly; therefore, in 1958 the USDA published the "Basic Four." This guide provided minimum servings of four basic groups: milk, meat, vegetable/fruit, and bread/cereal. Its intent was to provide the people with recommendations of what to eat in order to prevent nutritional deficiencies (Nestle, 2007).

After over twenty years, The "Basic Four" was retired in the 1970s, when dietary advice shifted from prevention of nutrient deficiencies to prevention of chronic disease.

As a result, dietary goals shifted to eating less red meat and decreasing fats to eating more lean meats, whole grains, and fresh fruits and vegetables.

Simultaneously, there were two government agencies vying for control over nutrition education and research. They were the USDA and the Department of Health, Education and Welfare (DHEW) (Nestle, 2007).

President Jimmy Carter wanted this arena controlled by a government agency, the USDA, and Senator Hubert Humphrey made it happen when he said, “HEW has avoided the area of prevention like the plague, and it’s about time that the USDA moves in. It’s going to take this aspect of the nutrition program whether it wants to or not” (Nestle, 2007, p. 53).

The Farm Bill (P.L. 95-113) passed by Congress in 1977 granted the USDA the lead responsibility for nutrition policy and education. This included dietary advice to the public. Now the USDA had a green light to oversee the development of dietary guidelines and a new food pyramid.

In 1988, the House Appropriations Committee did not want the DHEW’s successor agency, the Department of Health and Human Services (DHHS) to interfere with the USDA’s dietary guidance; therefore, they reaffirmed the USDA as the “lead agency” in dietary guidance (Nestle, 2007). This reaffirmation also ensured that any dietary advice would be consistent and not negatively affect agriculture (Nestle, 2007).

The language of the Dietary Guidelines continued to morph through the 1980’s and 1990’s until the publication of the 1992 Food Guide Pyramid. This guide introduced seven groups in a hierarchical graphic, a pyramid, with the least servings; i.e., foods to be

used sparingly – fats, oils, and sweets -- at the top and the most servings (6-11 daily) -- bread, cereal, rice, and pasta -- at the bottom, or foundation, of the pyramid.

Since the publication of the Food Pyramid in 1992, the serving sizes of all seven groups have not changed except that the daily meat group servings went from 2-3 servings of 5-7 ounces to 2-3 servings of 4-9 ounces. The “meat group” includes meat, poultry, fish, dry beans, eggs, and nuts.

The development of the food pyramid was the brainchild of nutritionists in the USDA’s Human Nutrition Information Service (HNIS). It was their concern that the dietary guidelines were too confusing and verbose for the public to understand, follow, and incorporate. Therefore, they developed a food guide that would provide a “visual” aid for the dietary guidelines. It included information on nutritional goals, food groups, serving sizes, and the number of daily servings.

Congress passed the Healthy Meals for Healthy Americans Act of 1994. This Act required all meals under the NSLP and SBP to meet the DGA (USDA 2007). After the passing of the Healthy Meals Act, the USDA published a manual, *The Road to SMI Success*. The purpose of this manual was “to help foodservice directors, supervisors, and managers successfully implement the USDA’s School Meals Initiative for Healthy Children (SMI) regulations within the scope of daily practice” (USDA, 2007, p. 1).

Every five years, experts study the DGA and issue a report. This report complies with P.L. 104-445, Title III (Nestle, 2007). There are three stages involved in the development of this report. In stage one, an external scientific advisory committee analyzes current scientific research and prepares a report. In stage two, both departments, the USDA and DHHS, develop key recommendations based on the findings of the report;

and in stage three, the recommendations are presented to the general public (USDA, 2005),

The DGA is technical, scientific, and written for policymakers, nutrition educators, nutritionists, and healthcare providers. It contains a vast amount of information not intended for the general public to comprehend; rather, “The intent of the Dietary Guidelines is to summarize and synthesize knowledge regarding individual nutrients and food components into recommendations for a pattern of eating that can be adopted by the public” (USDA, 2005, p. vi).

In order to accommodate the public’s interest, the USDA and DHHS developed a consumer brochure titled *Finding your Way to a Healthier You*, based on the DGA. The purpose of the booklet is to help Americans incorporate healthy food choices and physical activity into their daily lives so they may live a healthier lifestyle. The 2005 DGA remains current until the publication of the 2010 DGA. For the purpose of this study, I will use the 2005 DGA as the current reference.

Title III of the National Nutrition Monitoring and Related Research Act of 1990 requires the USDA and DHHS to evaluate the guidelines every five years and mandates the current published Dietary Guidelines as the driving force behind all federal nutrition policy (Nestle, 2007).

Federal and State Nutrition Legislation

These are the guidelines that the federal government used to develop their federal nutrition policy (P.L. 108-265), requiring all schools within the United States that participate in the federal school lunch program to have a Health and Wellness Policy in place by the start of the 2006-2007 school year (Buchanan, 2005).

Congress' nutrition policy applies to all school districts, and thus all states. The federal requirements are minimal: a nutrition policy that includes nutrition education, physical activity and other school-based activity goals, nutrition guidelines, compliance with the current USDA DGA, has a plan to implement the policy (including one person appointed as "in charge"), and must involve parents, students, the school board, school staff, and the community. The plan does not "tell schools what foods to serve, nor does it spell out how much physical activity students must receive" (Buchanan, 2005, p. 5). As a result, each state must create its own nutrition policy legislation.

Some states have taken it seriously and developed policy beyond the minimum federal requirements; other states have adopted, practically verbatim, the federal language into their own policy. Arizona banned the sale of soft drinks, candy, and gum at the elementary and middle school level, Oklahoma prohibits serving foods of minimal nutritional value in elementary schools. It also requires elementary students to have at least 60 minutes of physical activity weekly. North Carolina requires kindergarten through eighth grade students to have 30 minutes of daily physical activity (Buchanan, 2005).

The Connecticut House and Senate passed legislation removing sodas and junk food completely from all schools and requiring 20 minutes of daily physical activity for all students. Governor Jodi Rell vetoed that bill. She felt school boards would lose too much decision-making authority (Buchanan, 2005).

Alderman, Smith, Fried, and Daynard (2007) suggest a social epidemiologic approach to obesity. This approach examines the social issues surrounding the obesity

epidemic. It does not reject autonomous behavior, but it examines how individuals interact within a social context.

“A social epidemiologic view would use the law to create the social context and social capacity for health rather than focus on the actual attainment of health for the individual” (Alderman, Smith, Fried, & Daynard, 2007, p. 92).

The law would be required to address society’s risk factors, thus diverting the attention from the obese individual and redirecting it to the obese society. To address the epidemic of obesity fully, “the law must shift focus away from individual risk factors and seek the situational and environmental influences that create an environment conducive to health” (Alderman, Smith, Fried & Daynard, 2007, p.102).

“To be as effective as possible as a policy tool, the law should focus not only on frequently illusory individual choices, but also on population-wide change and environmental conditions that affect individual decisions” (Alderman, Smith, Fried, & Daynard, 2007, pp. 90-91).

Most legislative and regulatory efforts to control weight and obesity have focused on the individual and choices he or she makes regarding diet and exercise. Alderman, Smith, Fred, and Daynard (2007) propose looking at the obesity epidemic through social epidemiology. This will lead to larger, strategic public health goals.

Schwartz and Brownell (2007) believe that legislative and regulatory action is necessary in order to attain substantial progress in the battle of childhood obesity. In their article, “Actions Necessary to Prevent Childhood Obesity: Creating the Climate for Change” (2007), they propose changing the frame from which the public perceives obesity as an individual problem to that of a societal, public health catastrophe. They use

the term “toxic environment” in that it refers to “several layers of the world around us that interact with key elements of our biology” (Schwartz & Brownell, 2007, p. 79).

Schwartz and Brownell (2007) feel that if the emphasis is diverted from personal responsibility for obesity and redirected to obesity as a public health issue, then legislation and regulation will be more effective in combating juvenile obesity.

Viewed through a medical model lens, childhood obesity is an individual problem and requires individualistic treatment (i.e., an overweight person is obese due to how he or she lives his or her life and if one wants to lose weight, one has to do it oneself).

The public health model views obesity as a societal problem. Obesity as a societal problem involves public health organizations because they are concerned about the causative factors for an entire population and will enact changes that will have the greatest impact for the whole.

Schwartz and Brownell (2007) use adding fluoride to America’s drinking water as an example: from a medical approach, the increase in children’s cavities would have been an individual problem. Seek dental care and take fluoride to fix it. However, the public health approach had the government put fluoride in all our water. “It was a silent, but powerful health intervention that did not require individual behavior change yet led to a profound change in public health” (Schwartz & Brownell, 2007, p. 83).

In their article, “A Legal Primer for the Obesity Prevention Movement,” Mermin and Graff (2009) explain that in legislation, the federal constitution “trumps everything else. State laws can be different from federal laws, but when there is a conflict, the federal law prevails” (p. 1799).

Federal laws can control nutrition labeling and the content of public school lunches. State laws acting through police power can require restaurants to identify the nutritional content of the food served; restrict advertising of junk food to children; mandate school nutrition and physical education programs; require schools to measure, monitor, and report students' Body Mass Index (BMI); enforce mixed-use zoning rules to encourage more supermarkets and discourage fast food establishments; and improve opportunities and offer incentives for more physical and less sedentary lifestyles (Mermin & Graff, 2009). All of the above actions work toward the public health goal of reducing obesity.

In their article, "Obesity--The New Frontier of Public Health Law," Mello, Studdert, and Brennan (2006) state, "One of the newest targets of public health law is obesity" (p. 2601). Many public health activists support federal and state governments' involvement in fighting the obesity epidemic, but there also is opposition. Food industries are concerned about their profits, and consumer groups are concerned about their civil rights.

Are governmental interventions necessary in the name of public health impinging on Americans' constitutional freedoms of choice, speech, and contract? (Mermin & Graff, 2009) Public health advocates affirm that it is the government's duty to "regulate private behavior in order to promote public health" (p. 2601). Moreover, the federal government has the power to intervene in the name of public health and can impose taxes, policies, and subsidies in the interest of public health. For example, the government can, and "the majority of Americans believe they should, regulate the marketing of junk food to children" (p. 2602).

The American Psychological Association (APA) and the Institute of Medicine (IOM) support this research. Both organizations have completed studies affirming that

advertising to children does affect their eating habits, and children younger than eight years cannot comprehend the persuasive techniques of advertisements and basically believe what they see (Mermin & Graff, 2009).

Regulation at the federal level can decrease the advertising of unhealthy foods to children. This is similar to laws restricting tobacco and alcohol advertising. Some proposals include restricting the frequency and content of unhealthy food advertisements during children's programming as well as having equal representation of good nutrition and physical activity advertisements, alternatively, balancing unhealthy food ads against nutritious food and physical activity ads. Regulation can also include "the print media, the Internet, in-store promotional campaigns, and product tie-ins to children's television programs" (Mermin & Graff, 2009, p. 2603).

The federal government has control over the nutritional content of school meals under the NSLP and SBP; however, their jurisdiction stops at meals. A la carte foods and other competitive food sales, as well as physical education and activity, are not under the federal laws. Therefore, even though the federal government's involvement is limited in these areas, it can lay the tracks on which the states, exercising police power, can ride.

The power, strength, and effect of police power to regulate juvenile obesity defaults to the individual states. States can prevent or restrict third party vending machines in schools, they can mandate stringent physical education and activity goals, they can adopt structured nutrition programs similar to D.A.R.E, they can impose state sales tax on junk foods, they can require more nutritionally sound meals that surpass even federal guidelines, and they can promote a more physical lifestyle by increasing parks and recreation and safe routes to school.

The federal government is taking measures to combat juvenile obesity by mandating all states to adopt nutrition policies. However, individual state governments can be even more effective than the federal government. Police power specifically relates to state authority in areas of interest for the public's health, welfare, and safety (Mermin & Graff, 2009). It gives states more freedom from constitutional barriers and more regulatory power when it comes to public health and the ability to issue laws and regulations that address public health issues. Many agree that obesity is a public health issue, therefore clearing the way for state governments to use their police power "to develop and enact measures to counter obesity" (Mermin & Graff, 2009, p. 1800).

In a paper published in *The Journal of Law, Medicine, & Ethics* (Summer 2009), authors Gostin, Pomeranz, Jacobson, and Gottfried attest that the public health department has the legal power and ethical duty to regulate. This authority serves the purpose of protecting and promoting the health of the public.

Ryan, Card-Higginson, Shaw, Ganahl, and Thompson (2007) state, "Use of the law generally is a long supported and effective practice to advance public health. Police power authority supports states' actions and interventions targeting public health issues" (p. 414). The controversy remains with agreeing whether it is the public officials' legal duty to intervene in public health.

The federal government can regulate interstate commerce, raise taxes, and spend the public's money, but it is the Tenth Amendment of the Constitution that grants individual states the authority to adopt laws and regulations that prevent crime and secure the comfort, safety, health, and prosperity of all citizens. This police power gives states the

authority to place restraints on personal freedom to ensure the protection of all citizens (Ryan, Card-Higginson, Shaw, Ganahl, & Thompson, 2007).

Richards and Rathbun (1999) state, "The police power is the right of the state to take coercive action against individuals for the benefit of society" (p. 350). Courts consistently rule in favor of states on matters of individual states exercising their police power to protect public health and safety, even when conflicting with individual rights. Although the Constitution has undergone many changes and amendments, the police power, as it relates to public health, has not (Richards & Rathbun, 1999).

States have the power to uphold laws and regulations for the advancement of public health and to protect the public. Throughout history, courts have steadfastly recognized the Tenth Amendment as reason and justification for states to intervene in areas of public health for the good of the people (Ryan, Card-Higginson, Shaw, Ganahl, & Thompson, 2007).

Childhood obesity is a public health threat. Even though some will argue that it is an individual condition, Ryan, Card-Higginson, Shaw, Ganahl, and Thompson (2007) propose that obesity has all the characteristics of a public health threat because treating obese individuals puts a significant burden on an already economically stressed and fiscally perilous health care system. They propound that treating obese individuals oppresses an already weakened health care system, thus interfering with the system's capabilities of treating all individuals.

In a *USA Today* article titled "Rising Obesity Will Cost the USA \$344B," author Nanci Hellmich states, "Obesity will cost the USA about \$344 billion in annual medical-related expenses by 2018, eating up about 21% of health-care spending." (p.1)

Kenneth Thorpe, who completed an analysis on obesity for a collaborative report from United Health Foundation, the American Public Health Association, and Partnership for Prevention, states, "Obesity is going to be a lead driver in rising health-care costs."

The major findings of this report include the following:

- If current obesity trends continue, by 2018, 103 million American adults will be obese.
- The United States is expected to spend \$344 billion on health care costs attributable to obesity in 2018.
- Expected direct expenditures on obesity will exceed 21% of the nation's direct health care spending in 2018.
- The expected cost of obesity nationwide will be \$1,425 per person in 2018. Today, the cost of obesity is \$361 per adult. In ten years, obesity will cost four times more than it does today.
- If U.S. obesity levels stayed at today's current rates, \$820 per adult in health care costs could be saved. That equates to a total savings of almost \$200 billion by 2018 (Thorpe, 2009, p. 2).

Three factors that contribute to the increasing burden of treating obesity are the increase in the number of people that are obese, the increasing cost of treatments specific to obesity-related illnesses, and the demographic shift in population with a general trend for older individuals to be obese. Three factors that contribute to obesity are inadequate activity, unhealthy eating habits, and changing food alternatives. Obesity is the fastest growing public health challenge nationwide. It is prevalent across all socio-economic groups (Thorpe, 2009, p. 3).

The federal and state governments are beginning to recognize the perils of obesity. Nutrition policy legislation continues to be a hot topic in all 50 states. As statistics, reports, and research provide empirical evidence of the problem of obesity in American children, the federal government's involvement in nutrition and physical activity will expand because the juvenile obesity epidemic is a public health issue; and it is the governments' responsibility, both federal and state, to interfere with issues that impact the general health of the public.

Childhood Obesity Definition

The Centers for Disease Control and Prevention (CDC) is part of the U.S. Department of Health and Human Services. As a federal agency, its primary purpose is to ensure public health throughout the United States. At the time of its inception in 1946, its primary function was to fight malaria. It has since grown into one of the most powerful and globally recognized health agencies, specializing in health promotion, prevention, and preparedness. It focuses on five strategic areas: supporting state and local health departments, improving global health, implementing measures to decrease the leading causes of death, strengthening surveillance and epidemiology, and reforming health policies (CDC, 2010). Since the CDC is the leading government agency in the field of health, I accept its statistics and reports as primary sources and recognize this agency as an expert in the field of childhood obesity. It is my finding that most childhood obesity information directly references CDC's current published statistics.

Obesity is defined using Body Mass Index (BMI) screening. BMI is a practical measure used to determine overweight and obesity. It is a measure of weight in relation to height. To calculate BMI, divide weight in pounds by height in inches, squared and

multiplied by a conversion factor of 703. This formula is on the CDC website (BMI Formula, 2012). The CDC also provides a BMI calculator for children and teens. This calculator is on the CDC website. (BMI Calculator, 2012)

Once the BMI is calculated, it is plotted on CDC growth charts to determine the corresponding BMI-for-age percentile. The CDC has identified four different weight categories for children and adolescents (aged 2-19 years): underweight -- less than the 5th percentile, healthy weight -- 5th percentile to less than the 85th percentile overweight -- 85th percentile to less than 95th percentile, and obese -- equal to or greater than the 95th percentile (BMI Calculator, 2012).

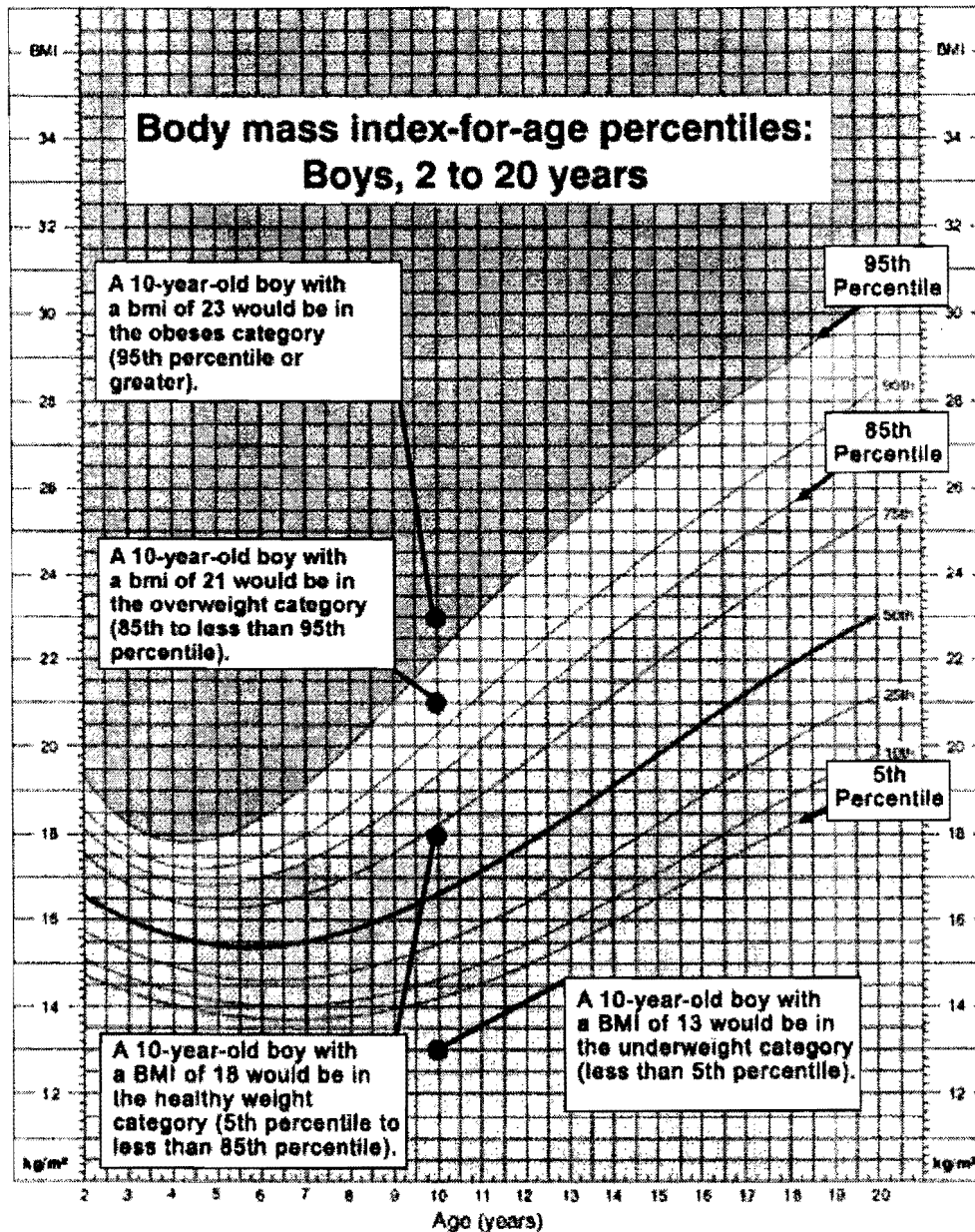


Figure 1. An example of BMI numbers for a 10-year-old boy.

Source: The CDC BMI-for-age growth charts are available at: CDC Growth Charts: United States.

Cynthia L. Ogden was the corresponding author of the article “Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007-2008” (Ogden, 2010, pp. 242-249). The article provided results of a study conducted by the National Center for Health Statistics (NCHS). NCHS is a department of the CDC and, as previously stated, research

from the CDC is primary and current. This study found that in subjects 2 through 19 years of age, 11.9% were at or above the 97th percentile of the BMI-for-age growth charts, 16.9% were at or above the 95th percentile, and 31.7% were at or above the 85th percentile of BMI for age.

Obese children are at risk for severe physical and emotional malformations. Physical conditions include type 2 diabetes, heart disease, high blood pressure, and other cardiovascular diseases. Society ostracizes obese children and many develop serious psychosocial burdens. Brown, Sutterby, and Thorton (2001) called it the greatest health risk facing children today. The magnitude of the problem is so serious that for the first time in the history of our nation the expected life span of children today is not expected to surpass that of today's adults (Mayo Clinic, 2002).

Role of the School

Surgeon General David Satcher (2001), in *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*, "calls upon individuals, families, communities, schools, worksites, organizations, and the media to work together to build solutions that will bring better health to everyone in this country" (p. xi). He further states the following:

Dealing with overweight and obesity is a personal responsibility as well as a community responsibility. A lack of safe places for children to play and adults to walk, jog, or cycle is a community responsibility. If school lunchrooms do not offer healthy and appealing foods, that is a community responsibility. When we do not require daily physical education in our schools, it is a community responsibility (p. xiii).

A Call to Action (2001) defines schools as crucial players in the crusade against overweight and obesity. It outlines a specific, detailed strategy that schools can utilize in promoting health and physical activity, including the following:

- Build awareness among teachers, food service staff, coaches, nurses, and other school staff about the contribution of proper nutrition and physical activity to the maintenance of lifelong healthy weight.
 - Educate teachers, staff, and parents about the importance of school physical activity and nutrition programs and policies.
 - Educate parents, teachers, coaches, staff, and other adults in the community about the importance they hold as role models for children, and teach them how to be models for healthy eating and regular physical activity.
 - Educate students, teachers, staff, and parents about the importance of body size acceptance and the dangers of unhealthy weight control practices.
 - Develop sensitivity of staff to the problems encountered by the overweight child.
- (p. 19).

In reference to action, some options include the following:

- Provide age-appropriate and culturally sensitive instruction in health education that helps students develop the knowledge, attitudes, skills, and behaviors to adopt, maintain, and enjoy healthy eating habits and a physically active lifestyle.
- Ensure that meals offered through the school breakfast and lunch programs meet nutrition standards.
- Provide healthy snacks and foods are in vending machines, school stores, and other venues within the school's control.

- Provide all children, from prekindergarten through grade 12, with quality daily physical education that helps develop the knowledge, attitudes, skills, behaviors, and confidence needed to be physically active for life.
- Provide daily recess periods for elementary school students, featuring time for unstructured but supervised play (p. 20).

Physical education (PE) refers to curriculum content. Although physical education is a requirement in all 50 states, the amount of time spent and the quality of the program varies from state to state. The National Association for Sport and Physical Education (NASPE), a leading organization of physical health, recommends that schools provide 150 minutes of instructional physical education for elementary school children and 225 minutes for middle and high school students per week for the entire school year. Physical activity (PA) refers to opportunities for children to be active, separate from state mandated PE requirements. The NASPE recommends school age children accumulate at least 60 minutes and up to several hours of physical activity per day while avoiding prolonged periods of inactivity.

Former U.S. Surgeon General David Satcher was one of the first authorities to call upon schools to take action against childhood obesity. Yearly, a child spends almost half of his or her life in school. Schools are available to all children, regardless of race, socioeconomic status, region, or demographics. What better setting to institute a war on obesity?

Summary

Childhood obesity is a nationwide epidemic. The nation recognizes that immediate and comprehensive action is necessary to attack this health issue. Section 4 of the

Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity

(2001) identifies 15 activities as national priorities for immediate action:

- Change the perception of overweight and obesity at all ages. The primary concern should be one of health and not appearance.
- Educate all expectant parents about the many benefits of breastfeeding since breastfed infants may be less likely to become overweight as they grow older.
- Educate health care providers and health profession students in the prevention and treatment of overweight and obesity across the lifespan.
- Provide culturally appropriate education in schools and communities about healthy eating habits and regular physical activity, based on the *Dietary Guidelines for Americans*, for people of all ages.
- Ensure daily, quality physical education in all school grades.
- Reduce time spent watching television and in other similar sedentary behaviors.
- Build physical activity into regular routines for playtime for children and their families. Ensure that adults get at least 30 minutes and children at least 60 minutes of moderate physical activity daily.
- Create more opportunities for physical activity at worksites. Encourage all employers to make facilities and opportunities available for physical activity for all employees.
- Make community facilities available and accessible for physical activity for all people, including the elderly.

- Promote healthier food choices, including at least five servings of fruits and vegetables each day and reasonable portion sizes at home, in schools, at worksites, and in communities.
- Ensure that schools provide healthful foods and beverages on school campuses and at school events by enforcing existing USDA regulations that prohibit serving foods of minimal nutritional value during mealtimes in school food service areas, including in vending machines, and adopting policies specifying that all foods and beverages available at school contribute toward eating patterns that are consistent with the *Dietary Guidelines for Americans*. In addition, provide more food options that are low in fat, calories, and added sugars, such as fruits, vegetables, whole grains, and low-fat or nonfat dairy foods and reduce access to foods high in fat, calories, and added sugars and to excessive portion sizes.
- Create mechanisms for appropriate reimbursement for the prevention and treatment of overweight and obesity.
- Increase research on behavioral and environmental causes of overweight and obesity.
- Increase research and evaluation of prevention and treatment interventions for overweight and obesity, and develop and disseminate best practice guidelines.
- Increase research on disparities in the prevalence of overweight and obesity among racial, ethnic, gender, socioeconomic, and age groups, and use this research to identify effective and culturally appropriate interventions (p. 33-35).

The results of a breakout session from the Mayo Clinic (May 2004) titled “Action on Obesity: Report of a Mayo Clinic National Summit” reiterate the Surgeon General’s

recommendations of 1996. The results recommend mandatory physical education from kindergarten through 12th grade, increasing opportunities for physical activity throughout the community, city planners providing safe walking, and bicycle paths, vending machines offering healthy choices, and school foods meeting healthy criteria.

Childhood obesity has two major adversaries: nutrition and physical activity. The federal government has recognized both opponents in the battlefield of childhood obesity and has begun its retaliation by mandating that schools receiving federal funds for school meals adopt nutrition and physical activity policies.

The guidelines of the federal policy touch upon nutrition and physical activity, but it is up to the states to interpret the policy. USDA nutrition guidelines are mandated, but those guidelines are limited to foods included in school meals. Snacks, a la carte items, celebratory foods, and fund raising treats are exempt. Here it is up to the states to regulate the nutritional content of such foods. The government mandate requires physical activity goals, but the states must decide the amount, frequency, and intensity. All states have adopted nutrition policies according to the federal mandate; it is the goal of this study to analyze each policy to determine if it meets the criteria for effective nutrition policy as defined by the research in Chapter 3.

Now that the individual factors that have influenced the origin, development, and success of nutrition policy are defined, this paper will focus on existing studies of state and local nutrition policies.

Literature Search Procedures

The researched online databases included EBSCOhost, ProQuest, ERIC, JSTOR, and Academic Search Premier to retrieve literature online and print editions of peer-

reviewed educational journals. Due to the ever changing and constantly shifting nature of obesity research, I also accessed reputable research organization websites such as Robert Wood Johnson Foundation (RWJF), School Nutrition Association (SNA), National Alliance for Nutrition and Activity (NANA), Center for Disease Control and Prevention (CDC), Action for Healthy Kids (AFHK), Center for Science in the Public Interest (CSPI), Trust for America's Health (TFAH) and USDA, known for their cutting edge and timely distribution of data.

Methodological Issues in Studies on Nutrition Policies

The insurmountable number of state and local nutrition policies in existence (i.e., 50 states, plus all public school districts within those states; New Jersey, for example, has over 600 school districts) makes the task of analyzing nutrition policy against specific criteria enormous. What defines effective nutrition policy? Which policies are better and why? How can a researcher be certain that the study evaluated is significant? To address these questions, I used the five federal requirements as a baseline and selected nutrition policy research that built upon and expanded those requirements.

Section 204 of P.L. 108-265, titled "Local Nutrition Policy," states the following: IN GENERAL- Not later than the first day of the school year beginning after June 30, 2006, each local education agency participating in a program authorized by the Richard B. Russell National School Lunch Act (42 U.S.C.1751 et seq.) or the Child Nutrition Act of 1966 (42 U.S.C.1771 et seq.) shall establish a local school nutrition policy for school under the local educational agency.

This is a federal mandate and affects all 50 states. In order to have a local nutrition policy for schools, states first must adopt a state nutrition policy. The state nutrition

policy must include the five minimum requirements outlined in Section 204 of P.L. 108-265. The five requirements extrapolated verbatim from federal legislation are as follows:

1. Includes goals for nutrition education, physical activity and other school-based activities that are designed to promote student nutrition in a manner that the local educational agency determines is appropriate
2. Includes nutrition guidelines selected by the local educational agency for all foods available on each school campus under the local educational agency during the school day with the objectives of promoting student health and reducing childhood obesity
3. Provides an assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture pursuant to subsections (a) and (b) of Section 10 of the Child Nutrition Act (42 U.S.C. 1779) and section 9(f)(1) and 17 (a) of the Richard B Russell National School Lunch Act (42 U.S.C. 1758(f)(1), 1766(a)), as those regulations and guidance apply to schools
4. Establishes a plan for measuring implementation of the local nutrition policy, including designation of 1 or more persons within the local educational agency or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local nutrition policy
5. Involves parents, students, and representatives of the school food authority, the school board, school administrators, and the public in the development of the school nutrition policy.

Based on the federal requirements, state legislatures write a nutrition policy and it becomes law. Local education agencies must adopt the state policy. They cannot eliminate or remove any state requirements, but they can add more if a district deems it in their best interest to promote student nutrition. This identifies two extensive variables when reviewing existing nutrition policy research: (1) the ability of every state to create an individual state nutrition policy and (2) the ability of local school boards to create individual school nutrition policy.

Studies and Evaluations of Nutrition Policies

The purpose of the Schwartz et al. (2009) study, “A Comprehensive Coding System to Measure the Quality of School Nutrition Policies,” is to develop a coding tool to evaluate school nutrition policies. Pairs of researchers from four different states coded a sample of 60 policies. “All coders were experienced researchers with a master’s degree or doctorate in nutrition, public health, or psychology” (p. 1256).

The coding system was developed by extracting policy tools from model policies. The system was “peer-reviewed by experts at the CDC, the Pennsylvania, and Connecticut State Departments of Education, and the Washington Department of Health” (p. 1257). A zero score meant the topic was not mentioned, a score of one meant the topic was mentioned within a recommendation or the language was vague, and a score of two meant the topic was specifically mandated and directly addressed. This study is strong in that it identifies seven categories, each with specific subcategories, for 96 content items for which to evaluate nutrition policies. It has limitations for national use because the coding system was applied to policies from only four states: Connecticut, Minnesota, Pennsylvania, and Washington.

The Masse et al. (2007) study “Development of a School Nutrition-Environment State Policy Classification System (SNESPCS),” set out to develop a system to classify state policies related to the school nutrition environment. This study specifically focused on state policy and, as a result, baseline statutes and regulations for each of the 50 states and the District of Columbia were included. Policies were obtained via searches of the Westlaw legal database. December 31, 2003, was the cut-off date for statutes and regulations.

The study team developed the classification system after reviewing “published literature, web reports, policy recommendations from various health agencies, government recommendations and guidelines, model policies in this area, and key documents” (Masse et al., p. S278). The policy areas were based on “best possible” evidence as listed above, and input from an expert panel of nine and four key experts. After an initial review, eight states piloted the classification system. States with the highest number of nutrition policies were selected: District of Columbia, California, Delaware, Florida, Louisiana, Nebraska, Ohio, and West Virginia.

After the pilot study was complete, 11 policy areas emerged: competitive foods (a la carte in cafeterias), competitive foods (vending machines), competitive foods (other venues), reimbursable school meal, school meal environment, food service director qualifications, coordinating or advisory councils, nutrition education, marketing (advertising), marketing (preferential pricing), and BMI screening. The scoring system reflected the “relative degree of the policy mandate within each of the 11 policy areas” (p. S280). Scores ranged from zero to a maximum of three or six points depending on the area. If a state was void of a policy for an area, it received a zero. A one indicated that

the area is included in the policy, recommended, but not mandated. The higher the score, the more restrictive the policy was in each area.

This study is strong in that it analyzes policy in all 50 States and provides a “methodology to monitor and classify state policies that have the potential to affect the school nutrition environment and to provide an initial baseline for ongoing policy evaluation” (p. S283).

A weakness of this study is that it only identifies 11 policy areas, which is not very extensive considering that the Schwartz et al. (2009) study had 96 content areas. However, the same researchers developed a physical education (PE) classification system identifying five policy areas. Combining this system with the PE system would create a more useful policy monitoring system.

Masse et al.’s (2007) second study, “Development of a Physical Education-Related State Policy Classification System (PERSPCS),” set out to develop a system to systematically and reliably access the nature and extent of state PE and recess related policies. Focusing specifically on state policies, statutes and regulations for all 50 States and the District of Columbia were obtained via searches of the Westlaw legal database. December 31, 2003, was the cut-off date for statutes and regulations.

PERSPCS was developed after reviewing scientific and gray literature and input from a 12-member panel of experts in physical activity, public health policy, and environmental health. Seven states piloted PERSPCS: California, Maine, New York, Texas, Minnesota, Missouri, and West Virginia. Two raters independently coded each policy; there were 67 policies.

Five policy areas for PE and recess time were identified. These areas are PE Time Requirement; Staff Requirements for PE; Curriculum Standards for PE; Assessment of Health Related Fitness; and Recess Time in Elementary Schools. Each area was scored ranging from a minimum of zero points to a maximum of five for PE Time Requirements and four for other policy areas. If a state was void of a policy for an area, it received a zero. A one indicated that the area is included in the policy, recommended, but not mandated. The higher the score, the more restrictive the policy was in each area.

Similar to the SNESPCS study, PERSPCS provides a valuable tool for nutrition policy classification. Since PERSPCS covers PE components and SNESPCS covers nutrition components, combining both classification systems would render an effective state nutrition policy analysis tool. Both studies by Masse et al. (2007) yield only 16 policy areas compared to Schwartz et al. (2009), which identifies 96 areas. Masse et al. (2007) would benefit from consulting Schwartz et al. (2009) to expand their policy areas. Conversely, Schwartz et al. (2009) sampled local school district policies, while Masse et al. (2007) sampled state policy. Although federal policy drives both state and local policy, a local education agency might have more flexibility when designing nutrition policy.

Action for Healthy Kids (AFHK) is “the nation’s leading non-profit and largest volunteer network fighting childhood obesity and undernourishment by working with schools to improve nutrition and physical activity (PA) to help our kids learn and eat right, be active every day and be ready to learn” (AFHK website, 2010).

Created in 2002, this organization has over 11,000 members. The members include professionals, parents, educators, community volunteers, business leaders, and students.

Partnerships exist with professional associates, government agencies, and corporations. Their vision is to have all kids develop the lifelong habits necessary to promote health and learning, and their mission is to engage diverse organizations, leaders, and volunteers in actions that foster sound nutrition and PA in children, youth, and schools. This organization includes a network of more than 65 national organizations and associates representing leaders in health, education, nutrition, fitness, business, government agencies, and other organizations that care about young people.

AFHK's four-page document, "Wellness Policy Fundamentals," provides a sample nutrition policy that states and schools can use to assist in the formation of individual nutrition policy (AFHK website, 2009). It includes six policy components that are reflective of the federal mandates. These include Local Nutrition Policy Area 1: Setting Nutrition Education Goals, Local Nutrition Policy Area 2: Setting Physical Activity Goals, Local Nutrition Policy Area 3: Establishing Nutrition Standards for All Foods Available on School Campus during the School Day, Local Nutrition Policy Area 4: Setting Goals in the School Meals Programs, Local Nutrition Policy Area 5: Setting Goals for Other School-Based Activities Designed to Promote Student Nutrition, and Local Nutrition Policy Component 6: Setting Goals for Measurement and Evaluation (AFHK website, 2009). This document is a template that any agency can easily modify to meet any situation or need. The language and semantics are compatible with any nutrition policy.

This is a general starting point. The language is broad, rather than specific. For example, it mentions that PE should be included in nutrition policy development but does

not specify a number of minutes per day or number of days per week. Those specifics are left to the agency designing the policy.

To conclude, this document provides exactly what the title implies, fundamentals for designing a nutrition policy.

A survey conducted by AFHK, "Local Nutrition Policies One Year Later: Showing Improvements in School Nutrition and Physical Activity" (2010), looks at 256 policies from 49 states. There are urban, suburban, and rural districts represented. District size ranges from small (up to 2500 students), to medium (2501-20,000 students), and large (over 20,000 students).

The purpose of this survey was to assess the policies using the "Nutrition Policy Fundamentals" explained above. By evaluating whether each policy meets the minimum requirements of the Fundamentals, benchmarks are set and documentation is available to continue to monitor states' progress in nutrition policy implementation.

The language and descriptors of the policy content are useful in that the main categories are identified first, then broken down into subcategories. These can then be included in the development of nutrition policy criteria.

For example, the broad category "Nutrition Education" is delineated further to include the following subcategories: All Grade Levels Included; Teacher Training; Aligned with other Health Education and Integrated across the Curriculum; and Promote Whole Grains, Low-fat/non-fat Dairy, Fresh Fruits, and Vegetables.

The downside of this survey is that it does not further explain or define the subcategories; for example, under school meals is a subcategory, "Time for Meals," but there is no explanation of how much time should be allotted or when meals should be

served. In addition, this survey uses policies obtained during 2006-2007 and might be considered outdated because nutrition policy is constantly changing and being updated.

The National Alliance for Nutrition and Activity (NANA) is made up of more than 300 organizations, including steering committee members such as the American Cancer Society, the American Diabetes Association, and the National Association for Sport and Physical Education. It also includes national organizations such as AFHK, the School Nutrition Association, the National Association of State Boards of Education, and state and local organizations such as Pennsylvania Advocates for Nutrition and Activity, the New York State Department of Health, and California Food Policy Advocates.

“NANA advocates federal policies and programs to promote healthy eating and physical activity to help reduce the illnesses, disabilities, premature deaths, and costs caused by diet and inactivity related diseases such as heart disease, cancer, high blood pressure, diabetes, and obesity (Center for Science in the Public Interest, 2013).

NANA developed a 26-page document, “Model Local School Wellness Policies on Physical Activity and Nutrition” (NANA, 2005). This document is by far the most comprehensive nutrition policy resource that this researcher has studied. Not only can a school district follow this model policy verbatim, it also includes thorough lists of websites and sources that an agency can consult for more information. The language is specific and detailed. For example, under the category Foods and Beverages Sold Individually, it states, “A food item sold individually will have no more than 35% of its calories from fat (excluding nuts, seeds, peanut butter, and other nut butters) and 10% of its calories from saturated and trans fat combined” (p. 11).

Whereas the AFHK model policy is “a la carte,” the NANA model policy is “all-inclusive.”

The School Nutrition Association (SNA) is “a national, nonprofit professional organization representing more than 55,000 members who provide high-quality, low-cost meals to students across the country” (SNA, 2013). SNA has been a recognized authority on school nutrition since its inception in 1946.

Two reports, *A Foundation for the Future: Analysis of Local Nutrition Policies from the 100 Largest School Districts (Future)*, and *A Foundation for the Future II: Analysis of Local Nutrition Policies from 140 School Districts in 49 States (Future II)* were accessed via SNA’s website and used in this research.

Future (October 2006) analyzed local nutrition policies from the 100 largest school districts in the United States. *Future II* (December 2006) analyzed local nutrition policies from a sample of 140 school districts in the United States representing seven regions.

SNA developed its own analysis tool based on legislative requirements and its own objectives. While the procedure for the development of the tool was not discussed, an appendix of the analysis criteria was included in both reports.

Five individuals with backgrounds in nutrition, policy analysis, and/or research analyzed the policies. The analysts received training on how to use the tool, and two people independently analyzed each policy. The results were compared and differences were resolved by group consensus. Policies from *Future* were collected and analyzed between March and October 2006, and policies from *Future II* were collected and analyzed between May and December 2006.

The policy components in the SNA criteria adhere to that of other studies identified in this research. Both studies are useful in that they provide a snapshot of what schools are doing nationwide with reference to effective nutrition policy. The analysis criteria is descriptive and comprehensive and the findings helpful in developing a detailed framework from which to analyze effective nutrition policy.

The data was school district driven instead of state driven, but following legislative protocol, a local agency's policy must incorporate state policy; therefore, it should be noted that although the local policies vary, they reflect state and federal mandates.

Schwartz et al. (2009) used research dated July 2007 and July 2008, the research of both SNESPCS and PERSPCS was dated 2007, AFHK's analysis was dated 2007, NANA's model policy was dated 2005, and SNA's study occurred in 2006; therefore, the timeliness of the findings needs to be recognized. Conversely, in order to limit this study, I initiated a July 2011 cut off based on the highly volatile arena of nutrition policy; thus, all aforementioned studies fall within this period.

Chapter 3

METHODOLOGY

This study summarizes and analyzes each state's compliance with current nutrition policy and best practices, defined as: (1) the recommended components for effective nutrition policy in existing research, and (2) the proposed breakfast and lunch school meal pattern changes based on the 2010 USDA Dietary Guidelines for the school breakfast and lunch programs. (*Dietary Guidelines for Americans, 2010*)

The research problem stated in Chapter 1 describes how, historically, the federal government mandated the states to have a school nutrition policy without providing clear guidelines. Therefore, nutrition policies vary from state to state and fail to include pertinent components such as serving size, frequency, and specific menu choices that reflect the dietary guidelines. The federal guidelines are vague regarding implementation and therefore do not ensure compliance or consistency across the states. As a result, in the absence of federal policy addressing school nutrition, it is unclear whether or not the policies on the state level contribute to the federal government's purpose of reducing childhood obesity. I undertook this research because, as stated in the Introduction and Literature Review, childhood obesity has reached epidemic proportions in America. As a result, the federal government began regulating the food served in schools during breakfast and lunch. The rationale behind the regulations is to improve the health of America's children, but if the federal government's requirements are not sufficiently specific, then the states are forced to develop their own nutrition policies; in effect, there could be 50 different nutrition policies, all attesting to improve childhood obesity without common language or purpose.

Research Design

This study is a comprehensive set of nutrition compliance analyses for each state and creates a baseline to measure the magnitude and direction of future nutrition policy changes.

I used a qualitative approach, drawing on the works of Weiss (1998), Scriven (1991), and Patton (2002), to examine the research questions. Weiss (1998) defines evaluation as “the systematic assessment of the operation and/or the outcome of a program or policy, compared to explicit or implicit standards, as a means of contributing to the improvement of the program or policy” (p. 4). Scriven (1991) defines formative evaluation as “evaluation designed, done, and intended to support the process of improvement” (p. 20). According to Weiss (1998), formative evaluation focuses on the process of the program; i.e., how it is being implemented. According to Patton (2002), the purpose of summative evaluation is to determine the overall effectiveness of a program, which he defines as “summing up judgments about a program to make a major decision about its value, whether it should be continued, whether the demonstrated model can, or should be, generalized to and replicated for other participants or in other places, and most recently, what improvements can be made to make the program more effective” (p. 214). I utilized a formative approach based on Scriven to support the process of improvement and a summative approach based on Patton’s to evaluate program effectiveness. These evaluations are essential for making judgments about a program or policy, whether it should be continued, and what improvements can make the program or policy more effective. The results of this research can benefit the states formatively, in terms of how they can improve their nutrition policies to comply with the proposed USDA changes,

and summatively, in terms of how effective the states' nutrition policies are and how they can be improved to better comply with the proposed USDA changes.

I evaluated the effectiveness and degree of compliance to breakfast and lunch standards for each state's current nutrition policy by employing a cross-state policy comparison. Evaluative research, according to Patton (2002), is "the systematic collection of information about activities, characteristics, and outcomes of programs, to make judgments about the programs, improve program effectiveness, and/or inform decisions about the future programming" (p. 10). As I collected information about activities, I made judgments about how to improve the effectiveness of the states' policies. My approach followed the five key elements of Weiss' (1998) definition: (1) systematic assessment, (2) operation assessment, (3) outcomes, (4) standards for comparison, and (5) contribution to improvement. Through these elements, I describe effective nutrition policy and understand the relationship between effective criteria and individual states' policy variables.

In this study, I used Weiss' (1998) improvement/accountability approach, which examines the effectiveness of policies evaluated and how well state policies align to the mandated criteria; by comparing them to each of the six Schwartz Components for effective nutritional policy. She defines a policy as "an officially accepted statement of objectives tied to a set of activities that are intended to realize the objectives in a particular jurisdiction" (p. 7). Thus, P.L. 108-265 aims to improve the health and nutrition of children, thereby decreasing the percentage of childhood obesity by requiring all local school districts that receive federal aid for school breakfast and lunch programs to adopt a local wellness policy. The evaluative question being asked in this study was

whether the policies in place meet the criteria for effective nutrition policy, thus improving the health of children. An evaluative method was appropriate for studying the effectiveness of nutrition policy because the purpose of evaluation is to analyze the outcome of a program or policy (Weiss, 1998).

Data Collection Strategies

To evaluate state nutrition policy, all 50 state government websites were accessed, and their most current state nutrition policies were consulted. The SNA and NASBE databanks contain all 50 state nutrition policies, which I crosschecked with the policies retrieved from the government websites. Not only are there differences between the states, I found more than one policy for each descriptor within one state. Table 1 presents examples of state policy names and policy topics representative of the focus of the state's nutritional policy as a whole. My purpose was to provide a snapshot of the multitude of policy names and topics found throughout the country. This sample reflects that a universal nutrition policy language does not exist, making it extremely difficult to identify what each state is doing in the field of childhood nutrition.

Table 1

Sample of State Nutrition Policy Names and Topics

State	Policy Name	Policy Topics
Alabama	Responsibilities for Child Nutrition Programs	Child Care Feeding, Reimbursements, School Breakfast, School Lunch
	Child Nutrition Programs	School Breakfast, School Lunch
Arizona	Nutritional Standards	Competitive Foods, Food Sales on School Grounds, Nutrition Guidelines, Vending
Illinois	School Wellness Policies Taskforce	Competitive Foods, Comprehensive School Health, Food Sales on School Grounds, Nutrition Education, Nutrition Guidelines, School Lunch, Vending
Maryland	School Health Promotion	Competitive Foods, Comprehensive School Health, Food Sales on School Grounds, Nutrition Guidelines, Vending
New Jersey	School Lunch; Availability to All Children	Meal Mandates, Nutrition Guidelines, School Lunch
Ohio	Standards for Food Sold on School Premises	Food Sales on School Grounds, Nutrition Guidelines
	School Food Programs	Meal Mandates, School Breakfast, School Lunch
Tennessee	Rules and Regulations	Nutrition Guidelines, School Breakfast, School Lunch
	Establishment of Nutritional Breakfast and Lunch	Meal Mandates, School Breakfast, School Lunch
West Virginia	Nutritional Standards for School Nutrition Program	Competitive Foods, Food Sales on School Grounds, Nutrition Guidelines, School Breakfast, School Lunch

Source: School Nutrition Association, State Policy Index. (State Policy Index, 2012)

In order to identify these policies, I conducted an initial library search of databases such as Academic Search Complete, LexisNexis Academic, Proquest, and indexes to articles. The base search term was the phrase “nutrition policy criteria.” Additional identifiers such as “school nutrition,” “childhood obesity,” “health policy,” and “school children,” narrowed the results. Then I identified full texts that might be useful, which

were saved, printed, and scrutinized. Next, I conducted an advanced search of databases and indexes, using key words such as “school nutrition policy,” “school health policy,” and “childhood obesity.” The cyclical process of collecting and analyzing data, identifying and developing concepts, and conducting advanced searches continued until I compiled over 200 documents, of which about 80 documents proved useful in the literature review. Of these 80 sources, I incorporated the ten most relevant sources and created the framework to analyze the states’ nutrition policies. These ten sources were used to construct Tables 3 through 10: Action for Healthy Kids, “Wellness Policy Fundamentals” (n.d.); Supplement to “F as in Fat: How Obesity Policies are Failing America, 2009” (2009); Center for Science in the Public Interest, “State School Foods Report Card” (2007); Action for Healthy Kids, “Local Wellness Policies One Year Later: Showing Improvements in School Nutrition and Physical Activity” (2007); School Nutrition Association, “National Nutrition Standards Recommendations” (2008); Longley & Sneed, “Effects of Federal Legislation on Wellness Policy Formation in School Districts in the United States” (2009); NANA, “Model Local School Wellness Policies on Physical Activity and Nutrition” (2005); Masse et al., “Development of a School Nutrition-Environment State Policy Classification System” (2007); Masse et al., “Development of a Physical Education Related State Policy Classification System” (2007); and School Nutrition Association, “A Foundation for the Future: Analysis of Local Wellness Policies from 140 School Districts in 49 States” (2006).

Data Sources

I combined data collected from state policy records and federal agency files, such as federal and state government websites, documents, and agencies, with data collected by

other organizations such as School Nutrition Association (SNA), Robert Wood Johnson Foundation, NASBE, and other non-profit organizations. I also referenced works from published authors, researchers, and medical experts in the field of obesity, as well as relevant print media such as newspapers, trade journals, and marketing samples.

In this study, I primarily relied on documents from a variety of sources that included “experts, quotations or entire passages from organizational, clinical or program records; memoranda and correspondence; and official publications and reports” (Patton, 2002, p. 4). I also used statistical reports provided by governmental and other reputable survey organizations. The use of these data on the distribution of resources and outcomes was helpful in the evaluation of improvement over time, but I concede the possibility of manipulation by the administering organizations to best support their cause. Nevertheless, these sources provided common criteria and comparable data that I used when developing the policy analysis criteria.

Data Analysis

I used content analysis methods. The content analysis was completed using inductive analysis to “discover patterns, themes, and categories (Patton, 2002, p. 453). The purpose of inductive strategy design is to allow the important analysis dimensions to emerge from patterns found in cases under study without presupposing the important dimensions in advance. I sampled data on nutrition identifying patterns. The patterns were used to develop a criterion by which to analyze the states’ nutrition policies. By studying all states’ nutrition policies, I was able to determine whether the findings for effective nutrition policy were state-specific or not. Table 2 summarizes the most common nutrition policy components extrapolated from the research and the sources

from which they came. The nature of this research includes federal policy, so the recent Healthy, Hunger-Free Kids Act (HHFKA) (2010), was included in the research findings for effective nutrition policy.

After I developed the analytic framework, I performed a content analysis of the 50-state nutrition policies using the analytic framework. Content analysis, according to Krippendorff (2003), “entails a systematic reading of a body of texts, images, and symbolic matter, not necessary from an author’s or user’s perspective” (p. 3).

Krippendorff (2003) states further, “Content analysis provides new insights, increases the researcher’s understanding of particular phenomena, or informs practical actions” (p. 18).

I coded the collected data against the primary sources to develop the indicators found in the theoretical framework. I applied Krippendorff’s (2004) conceptual framework for content analysis to complete the content analysis of the 50-state nutrition policies.

1. The prescriptive purpose is to guide the conceptualizations and design of practical content analytical research.
2. The analytical purpose is to facilitate the critical examination and comparison of the published content analysis.
3. The methodological purpose is to point to performance criteria and precautionary standards the researcher can apply in evaluating ongoing content analysis (p. 29).

The data reduction for this research began by identifying recurring nutrition policy categories found in the literature. The original categories were broad; I used the original requirements of P.L. 108-265. I then utilized color-coded index cards with the following seven headings: Standards for USDA Child Nutrition Programs and School Meals

(yellow), Nutrition Education, (blue), Nutrition Standards for Competitive and Other Foods and Beverages, (purple), Physical Activity, (white with blue pen), Physical Education, (green), Communication and Promotion, (white with purple pen), and Evaluation, (pink). As I studied the literature, I entered explicit indicators under the heading of the matching cards. For example, “Offer two fruit options daily” was entered on a yellow card under the heading Standards for USDA Child Nutrition Programs and School Meals. This process of data reduction techniques was painstakingly repeated until I developed categories and sub-categories. I then transferred the information on the color-coded note cards to an Excel spreadsheet. Individual sheets were created for the original seven categories and the sub-categories placed under the appropriate heading. For example, the heading Standards for USDA Child Nutrition Programs and School Meals had a sub-category, “Addresses nutrition standards for school meals beyond USDA requirements.”

Tables 3 through 9 index the seven effective policy components against the ten primary sources for policy frameworks included in this study: Action for Healthy Kids, “Wellness Policy Fundamentals” (n.d.); Supplement to “F as in Fat: How Obesity Policies are Failing America, 2009” (2009); Center for Science in the Public Interest, “State School Foods Report Card” (2007); Action for Healthy Kids, “Local Wellness Policies One Year Later: Showing Improvements in School Nutrition and Physical Activity” (2007); School Nutrition Association, “National Nutrition Standards Recommendations” (2008); Longley & Sneed, “Effects of Federal Legislation on Wellness Policy Formation in School Districts in the United States” (2009); NANA, “Model Local School Wellness Policies on Physical Activity and Nutrition” (2005);

Masse et al., “Development of a School Nutrition-Environment State Policy Classification System” (2007); Masse et al., “Development of a Physical Education Related State Policy Classification System” (2007); and School Nutrition Association, “A Foundation for the Future: Analysis of Local Wellness Policies from 140 School Districts in 49 States” (2006).

Table 2

Policy Frameworks: Effective Nutrition Policy Components Analyzed Within 50 States’ Nutrition Policies.

Effective Nutrition Policy Components	Policy Analysis Frameworks Containing Similar Components								
	Action For H.K (2009)	“F” Supplement (2008)	Schwartz et al (2008)	Action For H.K (2007)	SNA (2006)	Longley (2009)	NANA (2006)	Masse (2007)	Healthy, Hunger-Free Kids Act (2010)
1 Participates in federal meal programs	✓		✓	✓	✓		✓		
2 Has a School Breakfast Policy									Sect 105
3 Nutrition Standards for School Meals Beyond USDA (NSLP/SBP) Requirements	✓	✓	✓	✓	✓	✓	✓	✓	Sect 208
4 Promotes fruits, vegetables, whole-grain products, low-fat and fat-free dairy products, healthy food preparation methods, and health enhancing nutrition practices	✓		✓	✓		✓	✓	✓	
5 Adequate Time to Eat Policy	✓		✓	✓		✓	✓	✓	
6 Has a Farm to School Policy							✓		Sect 243

Table 2 reports the incidence of 6 effective nutrition policy components represented in the nine primary policy analysis frameworks studied. Individual component incidence rates range from 11% on the low end for the Farm-to-School Policy to 100% for Nutrition Standards for School Meals Beyond USDA Requirements. The overall incidence rate for all components is 54%, or 29 of 54 possible observations.

Table 3

Policy Frameworks: Nutrition Education

1 Nutrition Education	Policy Analysis Frameworks Containing Similar Components									
	Action For H.K (2009)	"F" Supplement (2009)	SNA (2008)	Action For H.K (2007)	Food Report Card (2007)	Longley (2009)	NANA (2005)	Masse (2007)	Masse-PE (2007)	SNA (2008)
Goals for nutrition education that promote student wellness determined by local education policy (Fed. Reg.)	✓		✓							
1.b Offered at each grade level				✓		✓	✓			✓
1.c Coordinates nutrition education with larger school community	✓			✓		✓	✓			✓
1.d Nutrition education extends beyond the school environment	✓						✓			
1.e Requires nutrition education training for all teachers	✓			✓		✓	✓			✓
1.f Integrates nutrition education into other subjects beyond health education	✓			✓		✓	✓			✓
1.g Teaches skills that are behavior focused, interactive, culturally relevant, and participatory							✓			
1.h Follows state specified nutrition and health education curriculum						✓	✓	✓		✓
1.i Addresses nutrition education quality										
1.j Promotes fruits, vegetables, whole-grain products, low-fat and fat-free dairy products, healthy food preparation methods, and healthy nutrition practices				✓			✓			
1.k Caloric balance between food intake and energy expenditure (physical activity / exercise)							✓			

Table 3 reports the incidence of 11 elements of effective nutrition education policy represented in the 10 primary policy analysis frameworks studied. Individual elements incidence rates range from 0% on the low end for element 1.i. “Addresses nutrition education quality” to 66% for elements 1.c. “Coordinates nutrition education with larger school community,” 1.e. “Requires nutrition education training for all teachers,” and 1.f. “Integrates nutrition education into other subjects beyond health education.” The overall incidence rate for all elements is 30%, or 30 of 99 possible observations.

Table 4

Policy Frameworks: Standards for USDA Child Nutrition Programs

2 Standards for USDA Child Nutrition Programs	Policy Analysis Frameworks Containing Similar Components									
	Action For H.K (2009)	"F" Supplement (2009)	SNA (2008)	Action For H.K (2007)	Food Report Card (2007)	Longley (2009)	NANA (2005)	Masse (2007)	Masse-PE (2007)	SNA (2006)
2.a Assures guidelines for reimbursable school meals are not less restrictive than USDA school meal requirements. (Fed. Reg.)										
2.b Addresses nutrition standards for school meals beyond USDA (NSLP/SBP) minimum standards	✓	✓		✓		✓	✓	✓		✓
2.c Nutrition information for school meals (e.g. Calories, saturated fat, sugar) is available and readily				✓			✓			
2.d If possible, all schools participate in available federal school meal programs	✓			✓			✓			✓
2.e Addresses school meal environment and ensures adequate time to eat to improve nutrition	✓			✓		✓	✓	✓		
2.f Specifies strategies to increase school meal programs participation	✓						✓			
2.g Addresses personal health needs							✓			
2.h Requires nutrition qualifications for school food service staff				✓			✓	✓		
2.i Ensures training or professional development for food service staff	✓						✓			

Table 4 reports the incidence of 9 standards for USDA Child Nutrition Programs represented in the 10 primary policy analysis frameworks studied. Individual standards incidence rates range from 0% on the low end for standard 2.a. "Assures guidelines... requirements" to 78% for standard 1.b. "Addresses nutrition standards for school meals...standards." The overall incidence rate for all standards is 32%, or 26 of 81 possible observations.

Table 5

Policy Frameworks: Nutrition Standards for Competitive and Other Food and Beverages

3 Nutrition Standards for Competitive and Other Food and Beverages	Policy Analysis Frameworks Containing Similar Components									
	Action For H.K (2009)	"F" Supplement (2009)	SNA (2008)	Action For H.K (2007)	Food Report Card (2007)	Longley (2009)	NANA (2005)	Masse (2007)	Masse-PE (2007)	SNA (2008)
3.a Includes nutrition guidelines for all foods available on school campus during the school day with the objective of promoting student health and reducing childhood obesity. (Fed. Reg.)	✓	✓		✓	✓		✓			✓
3.b Regulates food service a' la carte	✓	✓	✓		✓	✓	✓	✓		✓
3.c Addresses specific nutrition guidelines for beverages	✓				✓	✓	✓			✓
3.d Regulates food served, not sold, in school such as parties and celebrations	✓		✓			✓	✓			✓
3.e Addresses snacks during and after the school day	✓						✓			
3.f Addresses food used as rewards	✓			✓			✓			✓
3.g Addresses food related fundraising	✓				✓		✓			✓
3.h Nutrition information (e.g. Calories, saturated fat, sugar) is available for foods other than school meals				✓		✓	✓			

Table 5 reports the incidence of 8 elements of Nutrition Standards for Competitive and Other Foods and Beverages represented in the 10 primary policy analysis frameworks studied. Individual element incidence rates range from 22% on the low end for element 3.e. "Addresses snacks during and after the school day" to 89% for element 3.b. "Regulates food service a la carte." The overall incidence rate for all elements is 51%, or 37 of 72 possible observations.

Table 6

Policy Frameworks: Physical Education

4 Physical Education	Policy Analysis Frameworks Containing Similar Components									
	Action For H.K (2009)	"F" Supplement (2009)	SNA (2008)	Action For H.K (2007)	Food Report Card (2007)	Longley (2009)	NANA (2005)	Mass (2007)	Mass-PE (2007)	SNA (2006)
4.a Includes goals for nutrition education, physical activity, and other school-based activities that promote student wellness in a manner that the local educational agency determines appropriate. (Fed. Reg.)	✓									
4.b Addresses physical education (p.e.) curriculum for each grade level	✓	✓		✓		✓			✓	
4.c Addresses amount of time per week and number of days per week of p.e. for elementary school	✓			✓					✓	
4.d Addresses amount of time per week and number of days per week of p.e for middle and high school	✓		✓				✓		✓	
4.e PE classes are physically active	✓						✓			
4.f Addresses p.e. credits and waivers	✓						✓			
4.g Requires a competency assessment for each student										
4.h Address qualifications and requires ongoing professional development for p.e. instructors	✓			✓		✓	✓		✓	
4.i Addresses teacher-student ratio for p.e	✓									
4.j Requires students to participate in an annual health assessment		✓						✓	✓	
4.k Classroom health education curriculum complements p.e. curriculum	✓									

Table 6 reports the incidence of 11 elements of effective Physical Education policy represented in the 10 primary policy analysis frameworks studied. Individual element incidence rates range from 22% on the low end for element 4.e. "PE classes are physically active" to 56% for elements 4.b. "Addresses physical education curriculum for each grade level" and 4.h." Addresses qualifications and requires...instructors." The overall incidence rate for all elements is 27%, or 27 of 99 possible observations.

Table 7

Federal Regulations: Physical Activity

5 Physical Activity	Policy Analysis Frameworks Containing Similar Components									
	Action For H.K (2009)	"F" Supplement (2009)	SNA (2008)	Action For H.K (2007)	Food Report Card (2007)	Longley (2009)	NANA (2005)	Masse (2007)	Masse-PE (2007)	SNA (2006)
5.a Includes goals for nutrition education, physical activity, and other school-based activities that promote student wellness in a manner that the local educational agency determines appropriate. (Fed. Reg.)	✓									
5.b Physical activity (p.a.) is defined as physical activities outside of p.e. requirements	✓			✓						
5.c P.A. is provided for every grade level and throughout the school day (excluding recess)	✓			✓		✓			✓	
5.d Addresses p.a. opportunities before and after school	✓						✓			
5.e Requires all middle and high schools to offer interscholastic sports programs							✓			
5.f Requires after-school child care and enrichment programs to provide daily periods of moderate to vigorous p.a. for all participants	✓						✓			
5.g Addresses safe active routes to school	✓						✓			
5.h Addresses recess quality in the elementary schools to promote p.a	✓					✓	✓		✓	✓
5.i Discourages long periods of inactivity (2 or more hours):	✓						✓			
5.j Addresses community use of school facilities for p.a. outside of the school day	✓						✓			
5.k Addresses not using p.a. or withholding p.a. as punishment	✓						✓			
5.l Includes p.a. opportunities for the staff										

Table 7 reports the incidence of 12 elements of effective Physical Activity policy represented in the 10 primary policy analysis frameworks studied. Individual element incidence rates range from 0% on the low end for element 5.j. “Addresses community use...day” to 56% for element 5.h. “Addresses recess quality in the elementary schools to promote PE.” The overall incidence rate for all elements is 23%, or 25 of 108 possible observations.

Table 8

Policy Frameworks: Communication and Promotion

6 Communication and Promotion	Policy Analysis Frameworks Containing Similar Components									
	Action For H.K (2009)	"F" Supplement (2009)	SNA (2008)	Action For H.K (2007)	Food Report Card (2007)	Longle y (2009)	NANA (2005)	Masse (2007)	Masse- PE (2007)	SNA (2006)
6.a Involves parents, students, and representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy. (Fed. Reg.)	✓			✓			✓			
6.b Specifies how a district will engage parents to meet district wellness goals	✓									
6.c Addresses consistency of nutrition messages										
6.d District provides parents a list of foods that meet the district's snack standards and ideas for healthy celebrations/parties, rewards, and fundraising activities							✓			
6.e Addresses methods to solicit or encourage input from stakeholder groups (two-way sharing):										
6.f Requires district to provide information about p.e. and other school-based physical activity opportunities before, during, and after the school day							✓			
6.g District will support parents' efforts to provide their children with opportunities to be physically active outside the school day							✓			
6.h Specifies marketing to promote healthful choices	✓						✓	✓		
6.i Specifies restricting marketing of unhealthful choices							✓			
6.j Includes staff wellness programs specifically addressing the health of the staff	✓					✓	✓			
6.k Establishes and maintains a staff wellness committee							✓			
6.l Encourages staff to role model healthy behaviors						✓	✓			
6.m Specifies district use of Centers for Disease Control and Prevention's Coordinated School Health Model	✓			✓			✓			
6.n Establishes a School Health Council that is ongoing beyond policy development	✓			✓			✓	✓		
6.o Specifies who in the district is responsible for wellness/health communication beyond policy implementation reporting	✓			✓			✓			✓

Table 8 reports the incidence of 15 elements of effective Communication and Promotion policy represented in the 10 primary policy analysis frameworks studied.

Individual element incidence rates range from 0% on the low end for elements 6.c.

“Addresses consistency of nutrition method” and 6.e. “Addresses methods to solicit and encourage input from stakeholder groups (two-way sharing)” to 44% for element 6.n.

“Establishes a School Health Council that is ongoing beyond policy development” and 6.o., which “Specifies who in the district is responsible for wellness/health...reporting.”

The overall incidence rate for all 15 elements is 21%, or 28 of 135 possible observations.

Table 9

Policy Frameworks: Evaluation

7 Evaluation	Policy Analysis Frameworks Containing Similar Components									
	Action For H.K (2009)	"F" Supplement (2009)	SNA (2008)	Action For H.K (2007)	Food Report Card (2007)	Longley (2009)	NANA (2005)	Masse (2007)	Masse-PE (2007)	SNA (2006)
7.a Establishes a plan for measuring implementation of the local wellness policy, including designation of one or more persons within the local educational agency or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy. (Fed. Reg.)	✓			✓		✓	✓			✓
7.b Addresses a plan for policy implementation, including a person or group responsible, objectives, and dates:	✓			✓		✓	✓			✓
7.c Addresses a plan for policy evaluation including a person/group responsible for tracking outcomes:	✓			✓		✓	✓			✓
7.d Addresses the audience and frequency of a report on compliance and/or evaluation:										
7.e Identifies funding support for wellness activities or policy evaluation:	✓			✓						
7.f Identifies a plan for revising the policy:	✓						✓			

Table 9 reports the incidence of 6 elements of effective evaluation policy represented in the 10 primary policy analysis frameworks studied. Individual element incidence rates range from 0% on the low end for element 7.d. “Addresses the audience and frequency of a report on compliance and/or evaluation” to 56% for elements 7.a., 7.b. and 7.c. The overall incidence rate for all elements is 35%, or 19 of 54 possible observations.

Table 10

Schwartz Components: Nutrition Policy

Effective Nutrition Policy Components	Policy Analysis Frameworks Containing Similar Components								
	Action For H.K (2009)	"F" Supplement (2009)	Schwartz et al (2009)	Action For H.K (2007)	SNA (2006)	Longley (2009)	NANA (2005)	Mases (2007)	Healthy, Hunger-Free Kids Act (2010)
1 Participates in federal meal programs	✓		✓	✓	✓		✓		
2 Has a School Breakfast Policy									Sect 105
3 Beyond USDA (NSLP/SBP) Requirements	✓	✓	✓	✓	✓	✓	✓	✓	Sect 206
4 Promotes fruits, vegetables, whole-grain products, low-fat and fat-free dairy products, healthy food preparation methods, and health enhancing nutrition practices	✓		✓	✓		✓	✓	✓	
5 Adequate Time to Eat Policy	✓		✓	✓		✓	✓	✓	
6 Has a Farm to School Policy							✓		Sect 243

Table 10 reports the incidence of the 6 Schwartz Components represented in the 9 primary policy analysis frameworks studied. Individual component incidence rates range from 11% on the low end for component 2 “Has a School Breakfast Policy” to 100% for component 3 “Nutrition Standards for School Meals Beyond USDA (NSLP/SBP) Requirements.” The overall incidence rate for all components is 54%, or 29 of 54 possible observations.

After categorizing the data, I discovered that wellness policy, in general, was too broad to reduce into useful categories. Therefore, in order to produce a concise, focused, and articulate study, I delimited the specific area of wellness policy for this study. Because the origin of my interest in this study stemmed from nutrition, I chose the nutrition standards component of school wellness policy. I excluded foods that were not part of breakfast and lunch menus and were outside the control of federal regulations. I reviewed the parameters of the study and further narrowed the literature and research to

develop the analytical framework displayed in Table 10, Schwartz Components. This framework was entered into a separate Excel spreadsheet and the content of each state policy was recorded against the components. Figure 2 is an example of the state data spreadsheet.

State	Policy	Schwartz Components	BKS Compliance	BKS Compliance Text
AL	Y	Participates in Federal Meal Program	C	Compliant
AL	Y	School Breakfast Policy	N	Non-Compliant
AL	Y	Nutrition Standards beyond USDA	C	Compliant
AL	Y	Adequate Time to Eat Policy	C	Compliant
AL	Y	Promotes fruits, veggies, whole grain products, low-fat and fat-free dairy products, and healthy food meal preparation methods.	C	Compliant
AL	Y	Farm to School Policy	N	Non-Compliant

Figure 2. Analytical framework for nutritional policy.

In order to answer the subsidiary research question, the nutritional guidelines found in the states' nutrition policies were compared against the USDA proposed meal pattern changes found in Figure 3.

	Proposed Breakfast Meal Pattern			Proposed Lunch Meal Pattern		
	Grades K-5	Grades 6-8	Grades 9-12	Grades K-5	Grades 6-8	Grades 9-12
Meal Pattern	Amount of Food^a Per Week (Minimum Per Day)					
Fruits (cups) ^b	5 (1)	5 (1)	5 (1)	2.5 (0.5)	2.5 (0.5)	5 (1)
Vegetables (cups) ^{bc}	0	0	0	3.75 (0.75)	3.75 (0.75)	5 (1)
Dark green	0	0	0	0.5 ^d	0.5 ^d	0.5 ^d
Orange	0	0	0	0.5 ^d	0.5 ^d	0.5 ^d
Legumes	0	0	0	0.5 ^d	0.5 ^d	0.5 ^d
Starchy	0	0	0	1 ^e	1 ^e	1 ^e
Other	0	0	0	1.25 ^d	1.25 ^d	2.5 ^d
Grains ^f (oz eq)	7-10 (1)	8-10 (1)	9-10 (1)	9-10 (1)	9-10 (1)	12-13 (2)
Meats/Meat Alternates (oz eq)	5 (1)	5 (1)	7-10 (1)	8-10 (1)	9-10 (1)	10-12 (2)
Fluid milk ^g (cups)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Other Specifications: Daily Amount Based on the Average for a 5-Day Week						
Min-max calories (kcal) ^{hi}	350-500	400-550	450-600	550-650	600-700	750-850
Saturated fat (% of total calories) ^h	< 10	< 10	< 10	< 10	< 10	< 10
Sodium (mg) ⁱ	≤ 430	≤ 470	≤ 500	≤ 640	≤ 710	≤ 740
Trans fat	Nutrition label or manufacturer specifications must indicate zero grams of trans fat per serving.					

Figure 3. USDA proposed breakfast and lunch meal pattern changes.

Source: Federal Register/Vol. 76, No. 9/Thursday, January 13, 2011/Proposed Rules

Figures 4 and 5 were also used to direct the meal pattern comparisons and develop the descriptive indicators.

	Current Requirement	New Recommendation
Fruit	½ cup per day	1 cup per day
Grains and Meat/Meat Alternates	2 grains or 2 meat/meat alternates or 1 of each per day	1.4-2 grains per day plus 1-2 meat or meat alternates per day (Range reflects difference by grade group.)
Whole Grains	Encouraged	At least half of the grains to be whole grain-rich
Milk	1 cup	1 cup, fat content of milk to be 1% or less

Figure 4. Breakfast meal pattern comparison.

Source: www.iom.edu/schoolmeals

	Current Requirement	New Recommendation
Fruit and Vegetables	½-1 cup of fruit and vegetables combined	¾-1 cup of vegetables plus ½-1 cup of fruit per day
Vegetables	No specifications as to type of vegetable	Weekly requirements for dark green and orange vegetables and legumes and limits on starchy vegetables
Meat/Meat Alternates	1.5-3 oz equivalents (daily average over 5-day week)	1.6-2.4 oz equivalents (daily average over 5-day week)
Grains	1.8-3 oz equivalents (daily average over 5-day week)	1.8-2.6 oz equivalents (daily average over 5-day week)
Whole Grains	Encouraged	At least half of the grains to be whole grain-rich
Milk	1 cup	1 cup, fat content of milk to be 1% or less

Figure 5. Lunch meal pattern comparison.

Source: www.iom.edu/schoolmeals

Summary

In this chapter, I discussed the policy analysis procedures and data following the design and method. I also provided a detailed discussion of strategies I used to categorize the data and described the indicators that were used to analyze nutrition policy by comparing the resources and extracting from them common criteria used to analyze nutrition policy. Chapter 4 presents the results from an analysis of school nutrition policy compliance at the national and state level using two measures: (1) a comparison of existing state policy nationally and for each state versus Schwartz's six components for effective nutritional policy, and (2) a comparison of existing state nutrition standards for school breakfast and lunch meal patterns nationally and for each state versus the USDA proposed changes for those categories (USDA Standards). Chapter 5 synthesizes the theory as I summarize findings, add conclusions, and make recommendations for policy, practice, and future research.

Chapter 4

POLICY ANALYSIS

“Proper nutrition promotes the optimal growth and development of children” (*Dietary Guidelines for Americans*, 2010). “Schools are in a unique position to promote healthy eating and help ensure appropriate food and nutrient intake among students. Schools provide students with opportunities to consume an array of foods and beverages throughout the school day and enable students to learn about and practice healthy eating behaviors” (*Adolescent and School Health*, 2012). “Schools should ensure that only nutritious and appealing foods and beverages are provided in school cafeterias, vending machines, snack bars, school stores, and other venues that offer food and beverages to students. In addition, nutrition education should be part of a comprehensive school health education curriculum” (*Adolescent and School Health*, 2012).

Chapter 4 analyzes compliance rates for school nutrition policy at the state and national levels using two measures. First, data for existing state nutrition policy were compared to each of the six Schwartz components for effective nutritional policy. Second, data for existing state nutrition standards for school breakfast and lunch meal patterns were compared to the proposed 2010 USDA Dietary Guideline changes (*2010 Dietary Guidelines for Americans*, 2010). The proposed 2010 USDA Standards comparisons are analyzed separately for breakfast and lunch, sub-grouped by grade levels using the following criteria: Grades K through 5, Grades 6 through 8, and Grades 9 through 12. Section I is a nationwide, and by state, Schwartz Component compliance summary and analysis, including excerpts of language from state policies. Figure 6 summarizes the national Schwartz Component compliance for each of the six categories

nationally and reported as percentage of states complying. Table 11 reports Schwartz Component compliance for each state individually. Section 2 is a nationwide, and by-state, 2010 USDA Standards compliance summary and analysis. Figures 10, 11, 13, and 14 summarize the national 2010 USDA Standards compliance for each of eight categories broken down by grade groupings for both breakfast and lunch. .

For the purposes of this research, a state is compliant for the particular comparison a state “*policy*” is in place; otherwise, the state is non-compliant. In a few cases, compliance could not be ascertained and the term *incompatible* or *indeterminate* is used.

The term *policy* is generic and can refer to many types of policy tools used by authoritative governing bodies, such as state legislatures and state boards of education to effect change. For example, state boards can choose to adopt regulations that have the force of law, can merely express advisory guidance, or can influence local practice through funding incentives. Institutions and traditions that are unique to a given place (“this is how we do things around here”) greatly influences the type of policy instrument used (State School Health Policy Database, 2012).

Schwartz Component Compliance

Based on the work by Marlene B. Schwartz, six components of an effective school nutrition policy include (1) an Adequate Time-to-Eat policy; (2) a Farm-to-School policy; (3) participation in the Federal Meal programs; (4) a policy that promotes fruits, vegetables, whole grain products, low-fat and fat-free dairy products; and healthy food meal preparation (Promotes Healthy Food); (5) a School Breakfast policy; and (6)

nutrition standards that exceed the USDA requirements (Exceeds USDA). (Falbe, Kenney, Henderson, & Schwartz, 2011).

The State School Health Policy Database of the National Association of School Boards of Education (NASBE) (State School Health Policy Database, 2012) was the primary source for state policy data used to analyze Schwartz Components except for the Exceeds USDA component. “The NASBE State School Health Policy Database is a comprehensive set of laws and policies from 50 states on more than 40 school health topics. Originally begun in 1998 and maintained with support from the Centers for Disease Control and Prevention (CDC), the policy database is designed to supplement information contained in CDC's School Health Policies and Programs Study” (State School Health Policy Database, 2012). The data source for analyzing the Exceeds USDA component was the School Nutrition Association State Policy Index (2012).

Nationwide

Figure 6 summarizes nationwide compliance rates for the six Schwartz Components. Individual component compliance rates range from 36% on the low end for the Adequate Time-to-Eat Policy to 100% for the Participates in the Federal Meals Program component with a compliance rate equal to 59.2%.

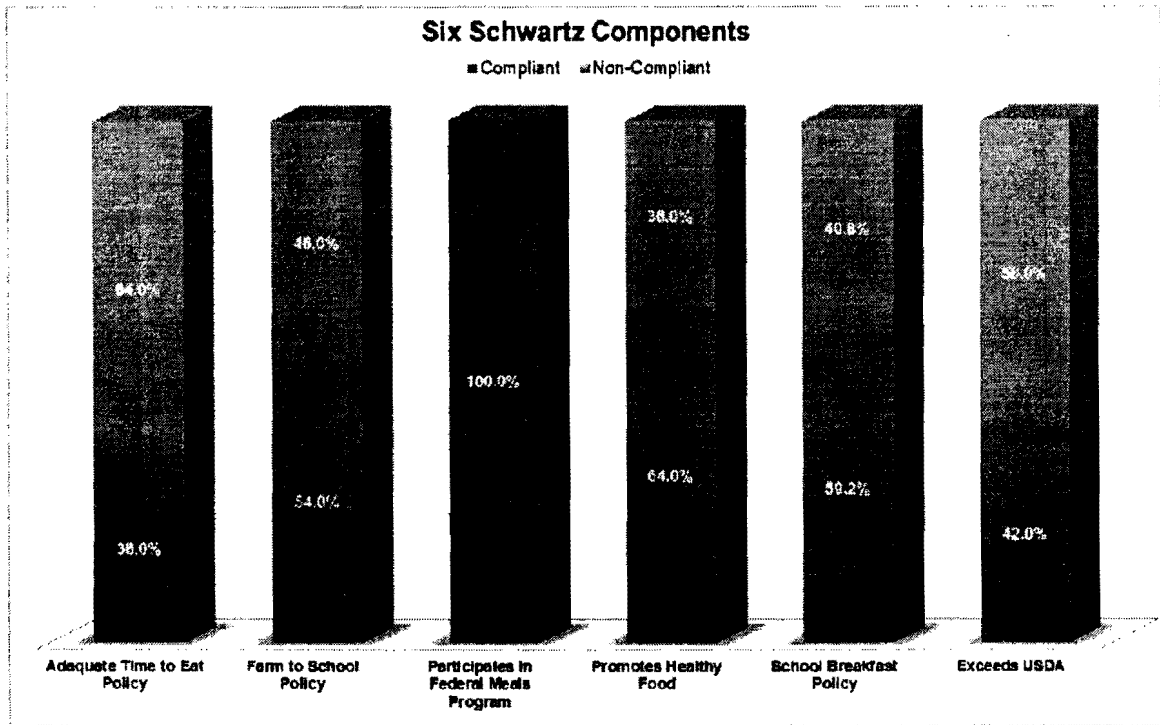


Figure 6. National Schwartz Component compliance rates.

Adequate Time-to-Eat Policy

Eighteen, or 36%, of all states were compliant with the Adequate Time to Eat policy while 32, or 64%, were non-compliant. The language for some states with policies is strong and specific, whereas others are weak and vague. Alabama’s policy lacks specificity or a mechanism for monitoring compliance. It states, “Adequate time to eat should be allowed. Schools should not establish policies, class schedules, bus schedules, or other barriers that directly or indirectly restrict access to and completion of meals” (Alabama’s Healthy Snack Standards for Foods and Beverages at School, 2012). Arkansas’s policy is substantially specific; “Arkansas recommends adequate time for students to receive and consume meals. Lunch and breakfast schedules should allow 20 minutes of seated time for lunch and 10 minutes of seated time for breakfast” (State School Health Policy Database, 2012). Connecticut’s policy is specific and statutory;

“Connecticut Statute 10-221o (2004) requires each local school district to offer all full-day students a daily lunch period of not less than 20 minutes” (State School Health Policy Database, 2012).

Farm-to-School Policy

Twenty-seven, or 54%, of all 50 states were compliant with Schwartz’s Farm-to-School policy, while 23, or 46%, were non-compliant. The language and mechanism to promote the Farm-to-School policy varies from state to state. Certain states have broad guidelines, such as Connecticut, whose statute language is as follows:

The program shall facilitate and promote the sale of Connecticut-grown farm products by farm-to-school districts, individual schools, and other educational institutions. The Department of Agriculture is charged with encouraging and soliciting Connecticut farmers to sell their products to districts, schools, and other educational institutions (State School Health Policy Database, 2012).

Certain other state laws include specific language, delivery mechanisms, and reporting requirements. For example, Alaska’s policy has very specific language and procedures for compliance:

Sec 03.20.100 (2010) establishes a farm-to-school program in the Department of Natural Resources. The Department is required to coordinate with the Department of Health and Social Services, the Department of Education and Early Development, the Department of Administration, and the University of Alaska Cooperative Extension Service. The program must do the following:

1. Coordinate with school procurement officials, buying cooperatives and other organizations to develop uniform procurement policies for use by public schools, along with materials and recommendations.
2. Assist food producers, distributors, and food brokers to market food grown in the state to public schools.
3. Assist public schools in connecting with local producers.
4. Identify and recommend mechanisms that will increase the predictability of sales for producers and adequacy of supply for purchasers.
5. Identify and make available to public schools existing curricula, programs, and publications that educate students on the benefits of preparing and consuming food grown in the state.
6. Support efforts to advance other farm-to-school activities.

The statute also requires the Department of Education to collect data on the activities required above and report biennially to the legislature (State School Health Policy Database, 2012).

Participation in the Federal Meals Program

All 50 states, or 100%, were compliant with participation in the Federal Meals Program. The National School Lunch Program (NSLP) is a long-standing and particularly successful component, of the Federal Meals Program. The standards apply to 31.8 million school lunches served each day.

In 1946, the National School Lunch Act created the modern school lunch program, though USDA had provided funds and food to schools for many years prior to 1946. About 7.1 million children were participating in the National School Lunch Program

by the end of its first year, 1946-47. By 1970, 22 million children were participating, and by 1980, the figure was nearly 27 million. In 1990, over 24 million children ate school lunch every day. In fiscal year 2011, more than 31.8 million children each day got their lunch through the National School Lunch Program. Since the modern program began, more than 224 billion lunches have been served” (National School Lunch Program, 2012).

According to NSLP, “Any [low income] child at a participating school may purchase a meal through the National School Lunch Program” (National School Lunch Program, 2012). Nutritional requirements for participation are “based on the latest *Dietary Guidelines for Americans*” (National School Lunch Program, 2012). The guidelines are specific and comprehensive. Compliance with these guidelines is required to receive government payments under NSLP.

Promotes Healthy Food

Thirty-two, or 64%, of all 50 states were compliant with the Promotes Healthy Food policy while 28, or 36%, were non-compliant. The language for some states with policies is strong and specific, while others are weak and vague. Texas Administrative Code states, “Baked potato products that are produced from raw potatoes and have not been pre-fried, flash-fried, or deep-fat fried in any way may be served without restriction. All schools must eliminate frying as a method of on-site preparation for foods served as a part of school meals” (State School Health Policy Database, 2012). New York’s Education Law “prohibits the sale of sweetened soda water, chewing gum, candies of various sorts, and water ices (except for those that contain fruit or fruit juices) in public schools from the beginning of the school day until the end of the last scheduled meal

period” (State School Health Policy Database, 2012). Michigan standards are very strict and specific, including the following language:

...targets total quantities for reimbursable meals throughout the school day:
fiber, 14-21 grams; sodium, 1,340-1,400 milligrams total throughout the school day reduced in a step-wise fashion so as to reach the target by 2020;
fruits and vegetables to increase over time to meet DGA (State School Health Policy Database, 2012).

School Breakfast Policy

Thirty, or 60%, of the states were compliant while 20, or 40%, were non-compliant. In fiscal year 2011, over 12.1 million children participated every day in the USDA School Breakfast Program. Of those, over 10.1 million received their meals free or at a reduced price (*SBP Fact Sheet*, 2012).

The language contained in the state policies for School Breakfast is generally specific; the requirements vary substantially. Connecticut statute “allows for grants to assist in implementing school breakfast programs in K-8 schools where 80% of lunches served are eligible for free and reduced lunch” (State School Health Policy Database, 2012); Georgia policy requires “school breakfast in K-8 schools with 25% or more free and reduced price eligible students and in all other schools with 40% or more free and reduced price eligible students” (State School Health Policy Database, 2012); whereas Iowa’s policy language allows school districts “to provide a school breakfast program at all schools in the district” (State School Health Policy Database, 2012).

Exceeds USDA Nutrition Standards

Twenty-one states, or 42%, of all states were compliant with the Exceeds USDA policy while 29 states, or 58%, were non-compliant. While “any state receiving federal reimbursement for free and reduced cost lunches must meet the federal requirements for reimbursable meals and snacks” (National School Lunch Program, 2012), individual states choose food selections with nutritional value in excess of USDA/NSLP standards. The source data for establishing compliance with the Exceeds USDA component is School Nutrition Association State Policy Index (State Policy Index, 2012). The data were collected prior to the passage of the Healthy and Hunger Free Kids Act of 2010 (*Dietary Guidelines for Americans*, 2010). The 2010 Act requires that states receiving NSLP adopt the 2010 Act by July 2012. Compliance for this component was determined using the 2005 USDA Dietary Guidelines because at the time of the research the 2010 USDA Dietary Guidelines did not exist. For the purposes of the Exceeds USDA component, a state was compliant if the state policy exceeded the 2005 USDA Dietary Guidelines. Some examples of the language used for the states that have Nutrition Standards beyond the USDA include the following: Michigan recommends “legumes to be offered two times per week as either a meat/meat alternate and/or vegetable component” (State Policy Index, 2012). The North Carolina minimum standards for school meals “require dark green, deep yellow, or orange fruits or vegetables to be offered three or more times per week” (State Policy Index, 2012). Dark green, deep yellow, or orange fruits or vegetables were not a 2005 Dietary Guideline requirement.

Schwartz Component Compliance by State

Table 11 reports compliance by state for each Schwartz Component versus the proposed 2010 USDA Standards and includes all states, all categories, and all grade levels.

Table 11

Schwartz Component Compliance by State

State	Time (1)	Farm (2)	Meals(3)	Promo (4)	B'fast(5)	USDA (6)
Alabama	✓		✓	✓		✓
Alaska		✓	✓			
Arizona			✓	✓		✓
Arkansas	✓		✓	✓	✓	✓
California	✓	✓	✓	✓	✓	✓
Colorado	✓	✓	✓	✓		✓
Connecticut	✓	✓	✓	✓	✓	✓
Delaware	✓	✓	✓	✓		
Florida		✓	✓		✓	
Georgia			✓		✓	
Hawaii			✓			
Idaho			✓	✓		
Illinois		✓	✓	✓	✓	
Indiana			✓	✓	✓	
Iowa		✓	✓		✓	
Kansas	✓		✓		✓	
Kentucky		✓	✓		✓	✓
Louisiana	✓	✓	✓		✓	✓
Maine	✓	✓	✓	✓	✓	
Maryland		✓	✓		✓	
Massachusetts		✓	✓		✓	✓
Michigan	✓	✓	✓	✓	✓	✓
Minnesota			✓		✓	
Mississippi	✓		✓	✓		✓
Missouri			✓	✓	✓	
Montana		✓	✓			
Nebraska			✓			
Nevada	✓	✓	✓	✓		
New Hampshire			✓			
New Jersey	✓	✓	✓	✓		✓

New Mexico	✓		✓	✓		✓
New York		✓	✓	✓	✓	
North Carolina			✓	✓		✓
North Dakota			✓			
Ohio			✓	✓	✓	
Oklahoma		✓	✓	✓		✓
Oregon		✓	✓	✓	✓	
Pennsylvania		✓	✓	✓		
Rhode Island			✓	✓	✓	✓
South Carolina	✓		✓	✓	✓	✓
South Dakota			✓	✓		✓
Tennessee		✓	✓	✓	✓	✓
Texas	✓	✓	✓	✓	✓	✓
Utah	✓		✓			
Vermont		✓	✓	✓	✓	✓
Virginia		✓	✓	✓	✓	
Washington		✓	✓	✓	✓	
West Virginia	✓		✓	✓	✓	
Wisconsin		✓	✓			
Wyoming			✓			

- Notes:*
1. Adequate Time-to-Eat policy
 2. Farm-to-School policy
 3. Participation in Federal Meals Program
 4. Promotes Fruits, Vegetables, Whole Grain Products, Low-Fat and Fat-Free Dairy Products, and Healthy Food Meal Preparation
 5. School Breakfast policy
 6. Exceeds 2005 USDA Nutrition Standards
- (✓) Denotes Compliance

Overall Schwartz Component Compliance

California, Michigan, and Texas are the only three states that comply with all six Schwartz components. Hawaii, North Dakota, and Wyoming are the only three states that comply with the Federal Meals Program alone. More than 50% of all states comply with the School Breakfast Policy, Farm-to-School Policy, and Promotes Healthy Foods Schwartz Components. Less than 50% of all states comply with the Adequate Time-to-Eat Policy and Exceeds USDA Nutrition Standards. The Federal Meals Program is the only Schwartz Component with 100% compliance.

Proposed 2010 USDA Standards Compliance

The second policy analysis compares the proposed 2010 USDA Standards (*2010 Dietary Guidelines for Americans, 2010*) to each state's school nutrition policy for breakfast and lunch meal patterns. The meal pattern descriptive indicators analyzed are verbatim from the proposed 2010 USDA Standards. Meal pattern indicators for breakfast include the following: (1) calories, (2) fluid milk, (3) fruits, (4) grains, (5) meats/meat alternatives, (6) saturated fat, (7) sodium, and (8) trans fat. Meal pattern indicators for lunch are as follows: (1) calories, (2) fluid milk, (3) fruit, (4) grains, (5) meats/meat alternative, (6) saturated fat, (7) sodium, (8) trans fat, and 9) vegetables. While the 2010 USDA Standards for *vegetable* descriptive indicators include dark green vegetables, orange vegetables, legumes, and starchy vegetables, I have combined the vegetable-related descriptive indicators into a single category called *vegetables*. This simplification is appropriate because (1) only a few states are compliant for any vegetable indicator, and (2) there is no meaningful difference in compliance between any vegetable indicator.

Sources for state school policy data included the following: (1) the School Nutrition Association Database State Policy Index (2012), (2) the NASBE State School Healthy Policy Database School Meals Program database (2012), (3) the proposed 2010 USDA Standards (*2010 Dietary Guidelines for Americans, 2010*), (4) a comparison of the 2005 USDA Standards and the proposed 2010 Standards (2005 USDA Standards; 2010 USDA Standards), (5) internet searches by state for each descriptive indicator, and (6) the USDA School Breakfast Program (SBP) regulations (*SBP Fact Sheet, 2012*). Data for the nine descriptive indicators were analyzed and reported as a percentage of states in compliance

for breakfast and lunch and further refined by the following grade level groups: Grades K through 5, Grades 6 through 8, and Grades 9 through 12.

The proposed 2010 USDA Standards for breakfast and lunch meal patterns appear in Figure 7. All categories and grade levels are detailed. Changes from the 2005 USDA Standards to the proposed 2010 USDA Standards for breakfast meal pattern are in Figure 8 and changes to the lunch meal patterns are in Figure 12.

Meal Pattern	Proposed Breakfast Meal Pattern			Proposed Lunch Meal Pattern		
	Grades K-5	Grades 6-8	Grades 9-12	Grades K-5	Grades 6-8	Grades 9-12
	Amount of Food* Per Week (Minimum Per Day)					
Fruits (cups) ^b	5 (1)	5 (1)	5 (1)	2.5 (0.5)	2.5 (0.5)	5 (1)
Vegetables (cups) ^{bc}	0	0	0	3.75 (0.75)	3.75 (0.75)	5 (1)
Dark green	0	0	0	0.5 ^d	0.5 ^d	0.5 ^d
Orange	0	0	0	0.5 ^d	0.5 ^d	0.5 ^d
Legumes	0	0	0	0.5 ^d	0.5 ^d	0.5 ^d
Starchy	0	0	0	1 ^e	1 ^e	1 ^e
Other	0	0	0	1.25 ^d	1.25 ^d	2.5 ^d
Grains ^f (oz eq)	7-10 (1)	8-10 (1)	9-10 (1)	9-10 (1)	9-10 (1)	12-13 (2)
Meats/Meat Alternates (oz eq)	5 (1)	5 (1)	7-10 (1)	8-10 (1)	9-10 (1)	10-12 (2)
Fluid milk ^g (cups)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Other Specifications: Daily Amount Based on the Average for a 5-Day Week						
Min-max calories (kcal) ^{hi}	350-500	400-550	450-600	550-650	600-700	750-850
Saturated fat (% of total calories) ^h	< 10	< 10	< 10	< 10	< 10	< 10
Sodium (mg) ⁱ	≤ 430	≤ 470	≤ 500	≤ 640	≤ 710	≤ 740
Trans fat	Nutrition label or manufacturer specifications must indicate zero grams of trans fat per serving.					

Figure 7. Proposed 2010 USDA Standards for breakfast and lunch meal patterns.

Source: (Dietary Specifics, 2012)

Breakfast

According to 2009 Census Data, 48.5 million children attend school in Grades K-12 (U.S. Census Bureau, 2009). In fiscal year 2011, over 12.1 million children participated every day in the USDA School Breakfast Program. Of those, over 10.1 million received their meals free or at a reduced price (*SBP Fact Sheet*, 2012).

Proposed changes to the Breakfast Meal Pattern, detailed in Figure 8, will take place gradually beginning in School Year (SY) 2013-14. The proposed changes include more grains; meals with appropriate calories for Grades K-5, 6-8, and 9-12; and gradually reduced sodium content (sodium targets must be reached by SY 2014-15, SY 2017-18, and SY 2022-23).

	Current Requirement	New Recommendation
Fruit	½ cup per day	1 cup per day
Grains and Meat/Meat Alternates	2 grains or 2 meat/meat alternates or 1 of each per day	1.4-2 grains per day plus 1-2 meat or meat alternates per day (Range reflects difference by grade group.)
Whole Grains	Encouraged	At least half of the grains to be whole grain-rich
Milk	1 cup	1 cup, fat content of milk to be 1% or less

Figure 8. Breakfast meal pattern comparison.

Source: (2005 USDA Standards versus proposed 2010 USDA Standards, 2012)

Breakfast K-5

Figure 9 summarizes nationwide compliance rates for Grades K-5 Breakfast Meal Pattern proposed changes. Individual component compliance rates range from 0% on the low end for sodium to 26% for fluid milk, with an average compliance rate equal to 10.5%.

Based on Figure 9, saturated fat and fluid milk have the highest compliance at 28% and 26%, respectively. The items of low compliance, aside from sodium and calories include fruit at 4%, grains at 6%, and meat/meat alternative at 8%. Arkansas is non-compliant because it requires fruits be offered at all points of service, but does not include a serving size. Colorado is non-compliant because its policy states that every student shall have access to fresh fruits at appropriate times during the school day, but does not define when or provide a serving size. Idaho is compliant because it offers a minimum of one fruit.

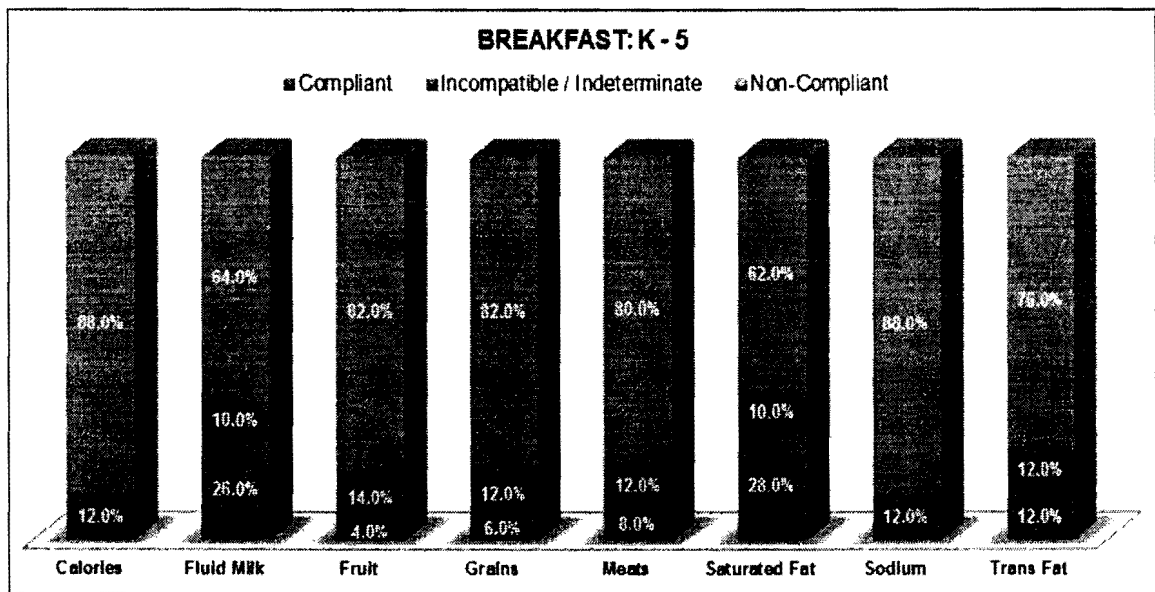


Figure 9. Proposed 2010 USDA Standards breakfast Grades K – 5 compliance rates.

Breakfast 6–8

Figure 10 summarizes nationwide compliance rates for Grades 6–8 Breakfast Meal Pattern proposed changes. Individual component compliance rates range from 0% on the low end for calories to 24% for saturated fat, with an average compliance rate equal to 9.0%.

Saturated fat and fluid milk have the highest compliance rates at 24% and 16%, respectively. The items of lowest compliance, aside from sodium at 2% and calories at 0% are fruit at 4%, grains at 6%, and meat/meat alternative at 8%. Michigan is non-compliant because its recommendation for trans-fat is zero OR less than or equal to .5 grams per serving. North Carolina is not compliant because its standards propose to decrease foods high in trans-fat but do not provide a percentage.

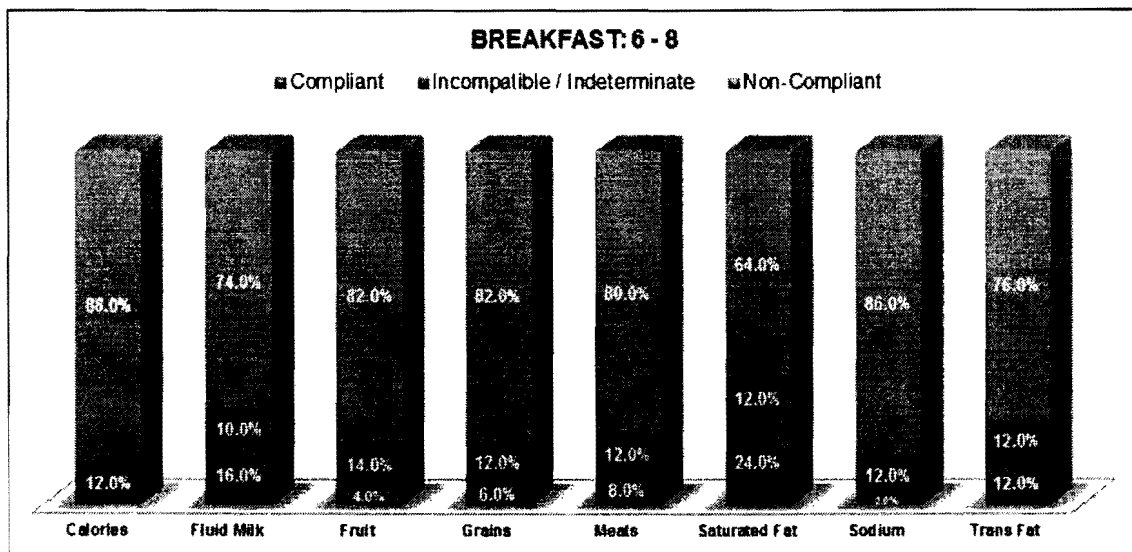


Figure 10. Proposed 2010 USDA Standards breakfast Grades 6 - 8 compliance rates.

Breakfast 9-12

Figure 11 summarizes nationwide compliance rates for Grades 9-12 Breakfast Meal Pattern proposed changes. Individual component compliance rates range from 0% on the low end for calories to 24% for saturated fat, with an average compliance rate equal to 9.0%.

Saturated fat and fluid milk have the highest compliance at 24% and 14%, respectively. The items of lowest compliance, aside from sodium at 8% and calories at 0% are fruit at 4%, grains at 6%, and meat/meat alternative at 4%. Examples of the language used for states in compliance with the fluid milk component include the

following: Idaho offers only fat-free (skim) and low-fat 1% milk, and Mississippi requires that only 1% and fat-free milk be available on school campuses. However, Pennsylvania is non-compliant in the fluid milk requirement because the language used states that at least 75% of milk offered must be 2% fat or less. Pennsylvania is also non-compliant because the serving size for all grade levels must be 8 oz. or less and Pennsylvania permits a 12 oz. serving size in middle and high school.

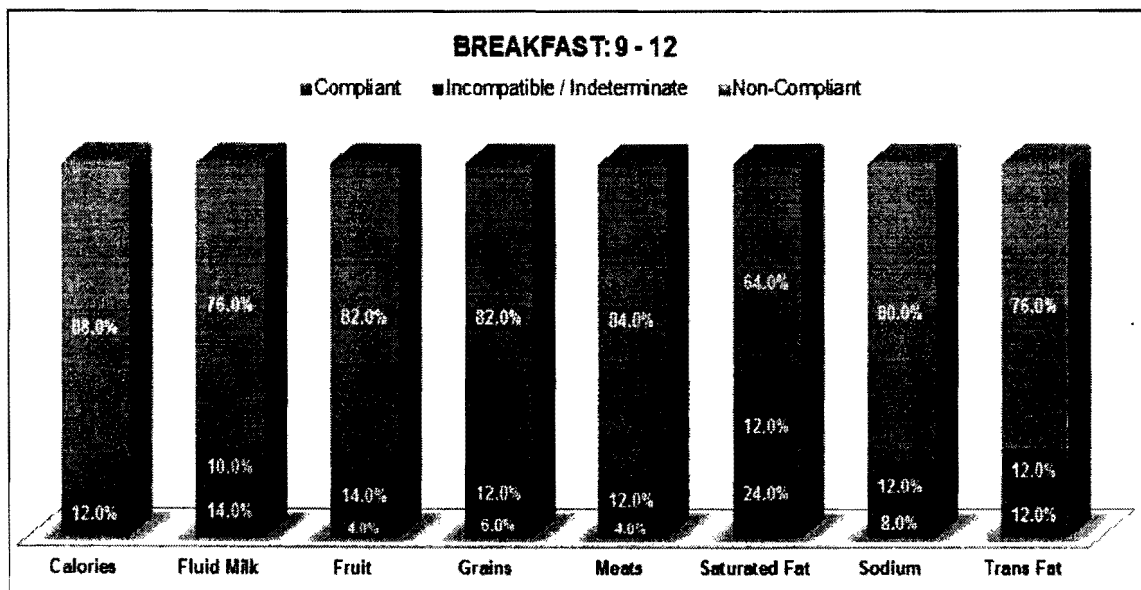


Figure 11. Proposed 2010 USDA Standards breakfast Grades 9 - 12 compliance rates.

Proposed 2010 USDA Standards for Breakfast Meal Pattern K-12 by State

Table 13 reports compliance, by state, for each Breakfast Meal Pattern category in the proposed 2010 USDA Standards for Grades K–12. Table 13 includes all states, all categories, and all grade levels. Careful reference to the notes is necessary to understand the data.

Table 12

Proposed 2010 USDA Breakfast Meal Patterns Compliance by State

State	Cal.	Milk	Fruit	Grain	Meat	Sat- Fat	Sodium	Trans Fat
Alabama		✓(1)				✓		
Alaska								
Arizona						✓(1)		
Arkansas		✓						
California						✓		✓
Colorado		✓(1)						
Connecticut						✓	✓(2)	✓
Delaware								✓
Florida								
Georgia								
Hawaii								
Idaho		✓	✓					✓
Illinois								
Indiana								
Iowa								
Kansas								
Kentucky								
Louisiana								
Maine								
Maryland								
Massachusetts								
Michigan		✓				✓		✓
Minnesota								
Mississippi		✓(1)				✓		
Missouri								
Montana								
Nebraska								
Nevada						✓	✓(2)	
New Hampshire								
New Jersey								
New Mexico					✓(3)			
New York		✓				✓		
North Carolina		✓				✓		
North Dakota								
Ohio		✓(3)						
Oklahoma								
Oregon		✓(1)						
Pennsylvania		✓						
Rhode Island		✓	✓	✓			✓(2)	

South Carolina					✓	✓(1)		
South Dakota						✓		
Tennessee				✓	✓		✓	
Texas								
Utah								
Vermont		✓(1)			✓			
Virginia								
Washington								
West Virginia		✓			✓(3)	✓	✓(4)	
Wisconsin								
Wyoming								

- Notes:*
1. Compliant Grades K-5 only.
 2. Compliant Grades 9-12 only
 3. Compliant Grades K-5 and 6-8
 4. Compliant Grades 6-8 and 9-12.

(✓) Denotes Compliance

Summary of Breakfast Meal Pattern Compliance in Grades K-12

Compliance rates for all states combined averaged only 9.5%, and 26 states were not compliant with any breakfast descriptive indicator. Overall, compliance rates for each descriptive indicator were in the single digits or low teens with the exception of fluid milk with 15 compliant states, or 30%, for at least one grade level. No states are compliant with the calories descriptive indicator for any grade level and only two states, Rhode Island and Idaho, are compliant with the fruit descriptive indicator.

Lunch

According to 2009 Census Data, “48.5 million children attend school in Grades K–12” (U.S. Census Bureau, 2009). Those students eat 48.5 million lunches a day, of which the National School Lunch Program subsidizes 31.5 million. (National School Lunch Program, 2012)

Proposed changes to the lunch meal pattern, detailed in Figure 12, will take place gradually beginning in SY 2013-14. The proposed changes include: more grains; more

and varied vegetables; meals with appropriate calories for Grades K-5, 6-8, and 9-12; and gradually reduced sodium content (sodium targets must be reached by SY 2014-15, SY 2017-18, and SY 2022-23).

	Current Requirement	New Recommendation
Fruit and Vegetables	½-1 cup of fruit and vegetables combined	¾-1 cup of vegetables plus ½-1 cup of fruit per day
Vegetables	No specifications as to type of vegetable	Weekly requirements for dark green and orange vegetables and legumes and limits on starchy vegetables
Meat/Meat Alternates	1.5-3 oz equivalents (daily average over 5-day week)	1.6-2.4 oz equivalents (daily average over 5-day week)
Grains	1.8-3 oz equivalents (daily average over 5-day week)	1.8-2.6 oz equivalents (daily average over 5-day week)
Whole Grains	Encouraged	At least half of the grains to be whole grain-rich
Milk	1 cup	1 cup, fat content of milk to be 1% or less

Figure 12. Lunch meal pattern comparison.

Source: (2005 USDA Standards versus proposed 2010 USDA Standards, 2012)

Lunch K-5

Figure 13 summarizes nationwide compliance rates for Grades K-5 Lunch Meal Pattern proposed changes. Individual component compliance rates range from 0% on the low end for meats to 28% for saturated fat with an average compliance rate equal to 12.7%.

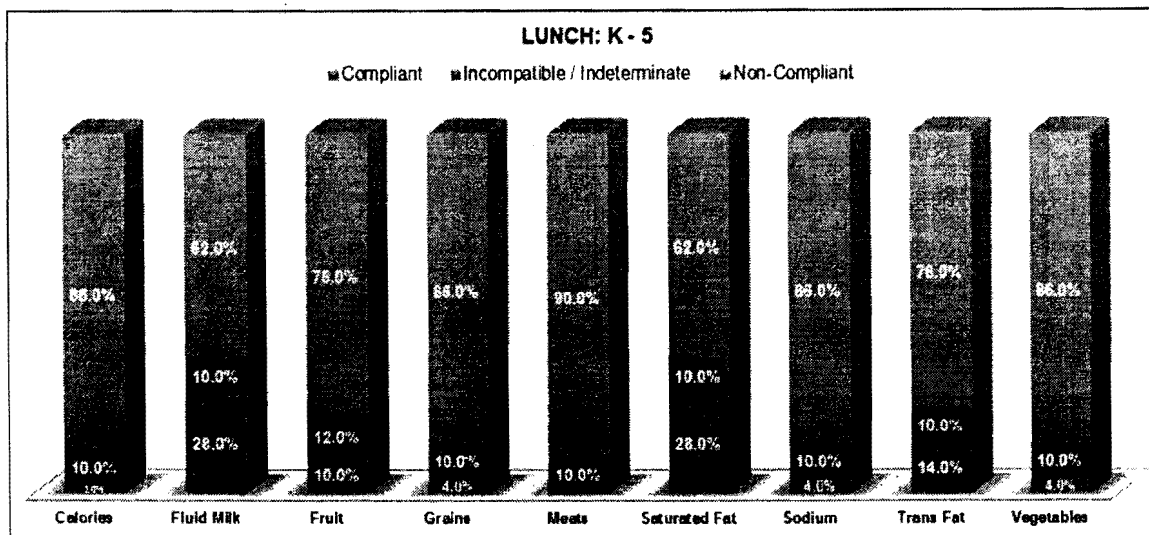


Figure 13. Proposed 2010 USDA Standards lunch K–5 compliance rates.

Lunch 6–8

Figure 14 summarizes nationwide compliance rates for Grades 6–8 Lunch Meal Pattern proposed changes. Individual component compliance rates range from 0% on the low end for meats to 26% for saturated fat with an average compliance rate equal to 9.3%.

Saturated fat and fluid milk have the highest compliance at 26% and 18% respectively. Trans-fat has the next highest compliance at 14%. The items of low compliance include meats at 0%, sodium 4%, calories 2%, and vegetables at 4%.

Examples of the language used for states in compliance with the grain component include the following: Idaho nutrition standards offer whole grains in all serving lines, and whole grains must be the first ingredient listed in purchased foods and homemade foods, and 50% of the grains in the recipe must be whole. North Carolina minimum standards for school meals require a minimum of one daily serving of whole grain products, and Rhode Island guidelines require all of the grains served to be at least 51% whole grain with the

percentage increasing by 10% every year until 100% whole grain is reached by 2013/2014.

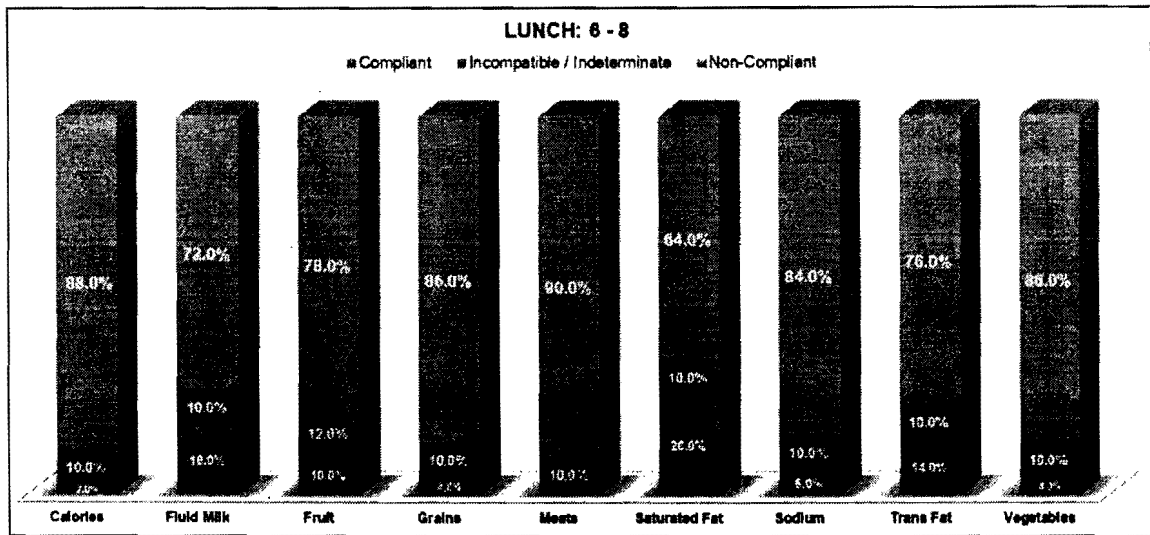


Figure 14. Proposed 2010 USDA Standards lunch Grades 6-8 compliance rates.

Lunch 9-12

Figure 15 summarizes nation-wide compliance rates for Grades 9-12 Lunch Meal Pattern proposed changes. Individual component compliance rates range from 0% on the low end for meats to 26% for saturated fat, with an average compliance rate equal to 8.9%.

Saturated fat and fluid milk have the highest compliance at 26% and 16%, respectively. Trans fat has the next highest compliance at 14%. Items of lowest compliance, aside from meats at 0%, are sodium at 8%, calories at 2%, and vegetables at 4%. Examples of language used in policies include the following: Washington is non-compliant because its policy limits sodium to 1100 mg. South Dakota is non-compliant because lunch sodium must be no more than 1300 mg. Nevada is compliant because the sodium requirement is no more than 600mg/serving.

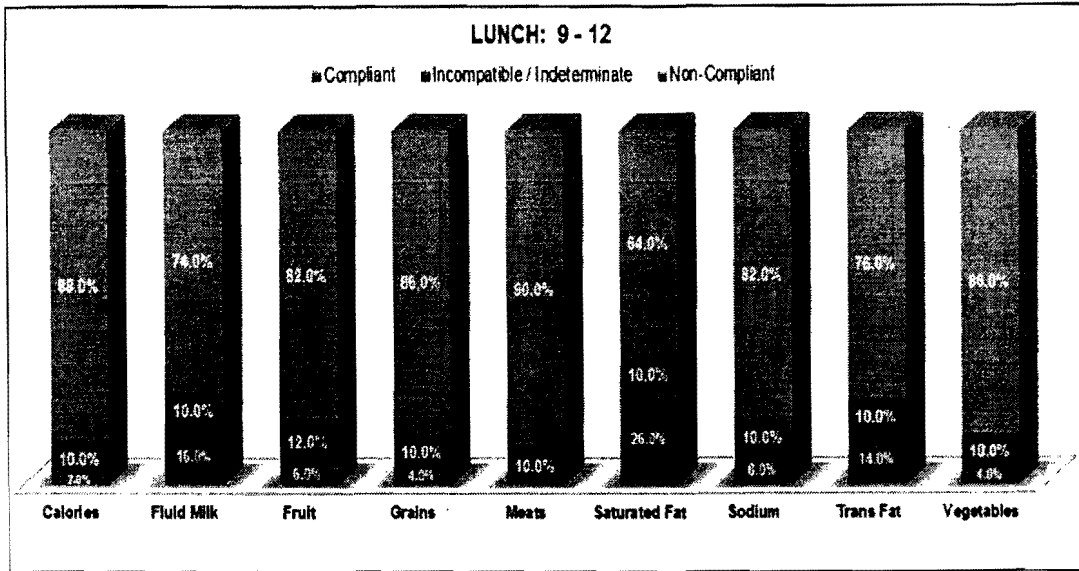


Figure 15. Proposed 2010 USDA Standards lunch Grades 9-12 compliance rates.

Proposed 2010 USDA Standards for Lunch Meal Pattern K-12 by State

Table 13 reports compliance, by state, for each Lunch Meal Pattern category in the proposed 2010 USDA Standards for Grades K-12. Table 14 includes all states, all categories, and all grade levels. Careful reference to the notes is necessary to understand the data.

Table 13

USDA Lunch Meal Pattern K-12 by State

State	Cal.	Milk	Fruit	Grain	Meat	Sat-Fat	Sodium	Trans-Fat	Veg's
Alabama		✓ (1)				✓			
Alaska									
Arizona	✓					✓			
Arkansas		✓							
California							✓	✓	
Colorado		✓ (1)							
Connecticut			✓ (3)			✓	✓	✓	
Delaware								✓	
Florida									
Georgia									
Hawaii									

Idaho		✓	✓					✓	✓
Illinois									
Indiana									
Iowa									
Kansas									
Kentucky									
Louisiana									
Maine									
Maryland									
Massachusetts									
Michigan		✓	✓			✓		✓	✓
Minnesota									
Mississippi		✓ (1)				✓			
Missouri									
Montana									
Nebraska									
Nevada						✓	✓		
New									
New Jersey									
New Mexico									
New York		✓				✓			
North Carolina		✓				✓		✓	✓
North Dakota									
Ohio		✓ (3)							
Oklahoma									
Oregon		✓ (1)							
Pennsylvania						✓			
Rhode Island		✓	✓	✓			✓ (2)		✓
South				✓					
South Dakota			✓			✓			✓
Tennessee		✓				✓			
Texas									
Utah									
Vermont		✓ (1)							
Virginia									
Washington									
West Virginia		✓				✓	✓ (4)	✓	
Wisconsin									
Wyoming									

- Notes: 1. Compliant Grades K-5 only.
2. Compliant Grades 9-12 only
3. Compliant Grades K-5 and 6-8
4. Compliant Grades 6-8 and 9-12.
(✓) Denotes Compliance

Summary of Lunch Meal Pattern Compliance in Grades K-12

Compliance rates for all states combined averaged only 10.3%, and 26 states were not compliant with any lunch descriptive indicator. Overall, compliance rates for each descriptive indicator were in the single digits or low teens with the exception of fluid milk with 14 compliant states, or 28%, for at least one grade level. No states were compliant with the calories descriptive indicator for any grade level and only five states, Connecticut, Idaho, Michigan, Rhode Island, and South Dakota were compliant with the fruit descriptive indicator.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

The purpose of the study was to summarize and analyze each state's compliance with current nutrition policy and best practices defined as (1) the recommended components for effective nutrition policy in existing research, and (2) the proposed breakfast and lunch school meal pattern changes based on the 2010 USDA Dietary Guidelines for the school breakfast and lunch programs (*2010 Dietary Guidelines for Americans*, 2010). The study also creates a by-state compliance baseline for future researchers to use to measure the speed and magnitude of compliance changes.

As early as the mid 1700s the federal government began its involvement in public education. Throughout its first century of involvement, the involvement was limited to land grants for states as endowments to support the formation of public schools. Between 1841 and 1848, over 77 million acres of land was endowed to states by Congress to support schools (LWVUS, 2011, *Education Study: The Role of the Federal Government in Public Education*). In 1867, the Department of Education was created. Its purpose was to collect information on schools and teaching that would help the states establish effective school systems. Over 130 years later, the original function of the Department of Education has developed a much more complex rationale with extensive objectives. World War II increased the federal government's support for education with the Lanham Act in 1941 and the Impact Aid laws of 1950. These statutes gave money to school districts within communities financially burdened by the military presence connected with the war. The GI Bill of 1944 provided financial assistance to war veterans for post-secondary education. The National Defense Education Act (NDEA) in 1958 gave loans

to college students majoring in science, mathematics, and foreign languages. Its purpose was to ensure that America would have highly trained individuals to compete against the Soviet Union in scientific and technical fields. The 1960s and 1970s focused on anti-poverty and civil rights within education, with various legislation prohibiting discrimination and providing aid to disadvantaged children so that they might receive an education equal to children of a higher socio-economic status. The 1980s and 1990s targeted education reform to keep America competitive with other countries and drug awareness to educate American youth to make good choices, dare to say no, and decrease the usage of drugs and alcohol. The year 2000 began with a heightened awareness of the inconsistencies in education received by children throughout the country. National and core content standards became the buzzwords and statewide accountability became the platform. President G.W. Bush signed the No Child Left Behind Act (NCLB) in 2001 to address educational discrepancies. NCLB changes the federal government's role in K-12 education by focusing on school success as measured by student achievement. The Act also contains the President's four basic education reform principles:

- Stronger accountability for results
- Increased flexibility and local control
- Expanded options for parents
- An emphasis on teaching methods that have been proven to work

As this historical accounting indicates, the federal government's involvement in public education has made a 360 degree turn from the original intent in the 1700s of simply collecting data to assist states in establishing effective school systems to regulating how schools are run, the content they teach, and the manner in which the

subject matter is delivered. Those who oppose the government's involvement in public education will argue that the government does not have any jurisdiction based on the 10th Amendment (1791) which states, "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." Article 1, Section 8, of the Constitution lists 18 powers of Congress, which include collecting taxes; declaring war; organizing, maintaining and disciplining a militia and regulating commerce with foreign nations. Public education is not one of the 18 powers; it should be the responsibility of local and state governments.

Now, with the second term of the Obama administration, federal involvement in public education has stepped even further away from its origin, with the introduction of The Healthy, Hunger-Free Kids Act (HHFKA) in 2010. This law, known as P.L. 111-296, addresses the nation's childhood obesity epidemic. It sets nutritional standards for all food offered anywhere on a public school campus. It goes beyond previous child nutrition laws because the nutritional standards do not apply only to federally funded school breakfast and lunch programs, but to food served a la carte, in vending machines, and school stores.

In theory, this act raises the bar for school nutrition. It reaches all children of America, providing them with healthy, nutritional school meals in accordance with the USDA 2010 Dietary Guidelines. It will educate them on how to eat healthy, what healthy choices to make, and, as a result, decrease the percentage of obese and overweight children in the country. According to a White House press release, this legislation includes three parts: (1) improves nutrition and focuses on reducing childhood obesity, (2) increases access to school meal programs, and (3) increases program

monitoring and integrity (White House Government, 2010, December 10, *Nutrition Fact Sheet*).

The research undeniably proves that childhood obesity is an epidemic. According to the most recent data provided by The Centers for Disease Control and Prevention, childhood obesity has more than tripled over the past 30 years. In 1980, 7% of children, aged 6-11 years were obese; that has increased to almost 20% in 2008. In 1980, 5% of adolescents aged 12-19 years were obese; that has increased to 18% in 2008.

Considerable government involvement in childhood obesity began with the Child Nutrition and WIC Reauthorization Act of 2004 (P.L. 108-265). This Act mandates the establishment of local wellness policies. Under this law, any local education agency (LEA) participating in the Richard B. Russell National School Lunch Act (NSLA) or the Child Nutrition Act (CNA) of 1966 must establish a local school wellness policy by the beginning of the 2006-2007 school year.

To fulfill the realms of this study, I first studied P.L. 108-265 which I have identified as the baseline or beginning of the government's significant involvement in childhood obesity which, for the purposes of this study, branched into involvement in school nutrition policy. The first cross-state policy evaluation was completed by accessing the wellness policies of the 50 states. Wellness policies encompass many facets of "wellness." As mandated by P.L. 108-265, in order for a state to receive federal funding for school breakfast and lunch programs, it had to adopt a wellness policy by the beginning of the 2006-2007 school year. The minimum requirements of the policy must include the following:

1. Include goals for nutrition education, physical activity and other school based activities that are designed to promote student wellness in a manner that the LEA determines appropriate
2. Include nutrition guidelines selected by the LEA for all foods available on each school campus under the LEA during the school day with the objectives of promoting student health and reducing childhood obesity
3. Provide assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture pursuant to Subsections (a) and (b) of Section 10 of the Child Nutrition Act (42 U.S.C. 1779) and Section 9(f)(1) and 17 (a) of the Richard B Russell National School Lunch Act (42 U.S.C.1758(f)(1), 1766(a), as those regulations and guidance apply to schools
4. Establish a plan for measuring implementation of the local wellness policy, including designation of 1 or more persons within the LEA or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy
5. Involve parents, students, and representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy

To analyze each requirement separately is too vast to complete in a single study. I chose Requirement 2, which “includes nutrition guidelines selected by the LEA for all foods available on each school campus under the LEA during the school day with the

objectives of promoting student health and reducing childhood obesity” (P.L. 108-265, 2004) as the focus of this study.

I created a comprehensive framework after reviewing the literature for this study and incorporating the works of Schwartz et al. (2009), Action For Healthy Kids (2007, 2009), The Center for Science in the Public Interest (2007), Longley (2009), Masse et al. (2007a), Masse et al. (2007b), National Alliance for Nutrition and Activity (2005), The Robert Wood Foundation (2009), The School Nutrition Association (2006), The National Association of School Boards of Education (2011), IOM report “School Meals: Building Blocks for Healthy Children” (2009), P.L. 108-265 (2004), P.L. 111-296 (2010), and the USDA Food and Nutrition Service Proposed Rule 7CFR, Parts 210 and 220 (2011).

I developed a comprehensive framework to include six descriptive indicators for effective nutrition policy. The descriptive indicators are (1) participates in federal meal programs; (2) has a school breakfast policy; (3) has nutrition standards beyond the USDA (NSLP/SPB) requirements; (4) has an adequate time-to-eat policy; (5) promotes fruits, vegetables, whole grain products, low-fat and fat-free dairy products, and healthy food meal preparation; and (6) has a farm-to-school policy.

Each state policy’s content was researched to verify which indicators were included. The qualifiers compliant and non-compliant were recorded for each indicator for each of the states. Compliant was defined as having the component included in the policy; non-compliant was defined as not having the component included in the policy. The percentage of compliance was determined for each component.

Participates in Federal Meal Programs

Although all states participate in federal meal programs, the extent of their participation is undetermined because each local school district must individually apply for reimbursement from the federal government. The requirements for reimbursement are based on the number of families and their SES enrolled in a district. For example, New Jersey has over 600 public school districts. Yes, New Jersey participates in the federal meal programs, but each district's participation fluctuates because within a district there can be some schools eligible for federal meal reimbursement and other schools ineligible depending upon family income. To explain further, the school district in which I live is regional; it includes two towns. The SES of each town is different. One town has a higher tax bracket than the other. Therefore, the two elementary schools in the town with the lower tax bracket have a higher participation in the federal meal reimbursement program due to their population than the two elementary schools in the town with the higher tax bracket.

Some states have separate legislation that provides school meal financial assistance above the federal funding. A recommendation for future research is to complete an analysis of state school meal funding to determine which states and to what extent they are assisting their local school districts with the cost of school meals beyond federal funding.

Has a School Breakfast Policy

In order for a state to be compliant with the school breakfast policy indicator, the state must have a separate state breakfast policy unrelated to participating in the federal meal program. Participation in the federal meal program equates to the fact that all states

receive some reimbursement for providing school meals. A state may provide lunch, but not breakfast. Therefore, that state will only receive monies from the federal government for its participation in the NSLP, not the SPB. A state that participates in both federal meal programs, the NSLP and SPB, receives monies for both of those programs. Section 105 of the HHFKA 2010 authorizes appropriations for grants to state agencies for sub grants to local educational agencies to establish, maintain, or expand the School Breakfast Program. More than half of the 50 states have school breakfast legislation.

Has Nutrition Standards beyond the USDA (NSLP/SPB) Requirements

USDA nutrition standards include an extensive assortment of variables. Some are calories per meal, sodium amounts, types and amounts of vegetables, preparation of food, and quantity and type of milk. Some standards vary by grade level. For example, the breakfast serving size for meat/meat alternative is one ounce for all grade levels. Grades K-8 require five servings/week, but Grades 9-12 require seven to ten servings/week.

Forty-two percent of the states had nutrition standards beyond the USDA. This research did not conduct a detailed analysis of each standard. A future study of each state and their nutrition standards to discover which state's nutrition standards are better than the USDA requirements is suggested. This is important because studying each state's nutrition standards and identifying patterns will provide national data that can be used to determine which states or areas in the country have higher nutrition standards. The goal is to improve the quality of school meals. Policymakers can determine which states go beyond the USDA recommendations and share that information with the states that do not go beyond USDA recommendations. Sharing of this knowledge can assist in a national movement to improve the nutrition standards of school meals.

Has an Adequate Time-to-Eat Policy

Current research indicates the minimum amount of time, after receiving a meal, to eat breakfast and lunch is 10 minutes and 20 minutes, respectively. Currently, the federal government does not have any mandates regulating “time to eat.” According to this study, 36% of the states have an adequate Time-to-Eat policy which means those states have a Time to Eat policy separate from existing nutrition policy. Some policies stipulate exact times, while others require adequate time to eat, but do not define “adequate.” If a state does not specify how much time should be allotted to eat breakfast and lunch, the local districts must set their own parameters. “A survey by the SNA shows elementary students have about 25 minutes for lunch; middle school and high school students, about 30 minutes. That includes the time students need to go to the restroom, wash their hands, walk to the cafeteria, and stand in line for their meals” (Hellmich, 2011). After considering the other variables that take time away from actual meal consumption, students end up with about 10 to 15 minutes remaining to eat their meals. The government recommends at least 20 minutes for students to eat their lunch, and research shows that when one eats quickly, one consumes more calories, enjoys the meal less, and feels hungrier an hour later. In addition, due to the nature of the actual functions of crunching and chewing, it takes longer to eat raw vegetables than it does to eat a cheeseburger or chicken nuggets. Therefore, it takes longer to eat healthy foods (Hellmich, 2011). This is important because without defining a specific number of minutes for eating school meals, states may be doing a disservice to the nation’s children and actually contributing to the childhood obesity epidemic.

**Promotes Fruits, Vegetables, Whole grain Products, Low-fat and Fat-free Dairy
Products, and Healthy Food Meal Preparation**

Similar to the nutrition guideline indicator, this descriptor includes a vast array of options. Sixty-four percent of the states are compliant. A recommendation for future research is to conduct a cross-state analysis of each choice in the benchmark to determine which factors the states are promoting. This can be further delineated according to geographical region. For example, states in the South and West may find it easier to comply with promoting fruits and vegetables because they have access to produce year round, while states in the Midwest may find it easier to comply with promoting whole grain products because they have access to grains more readily than a state in the East. Noting where states' weaknesses lie can improve their compliance and positively contribute toward the national goal of healthier and hunger-free children.

Has a Farm-to-School Policy

Section 243 of the HHFKA 2010 requires the USDA to provide competitive grants that do not exceed \$100,000 to schools, state, and local agencies, ITOs, etc., for farm-to-school activities. Fifty-four percent of the states in this research have farm to school policies, but the lexis of the policies ranges in complexity, specificity, and accountability. The federal provision is also vague. A recommendation for future research is to analyze the states' farm-to-school policies and determine recommendations for effective farm-to-school policy.

Unfortunately, P.L. 108-265 was not significant enough to alter national obesity. It was vague and provided the states with little guidance in the field of school nutrition. As a result, on December 2, 2010, the U.S. House of Representatives passed The Healthy,

Hunger-Free Kids Act (HHFKA). President Obama signed this into law (P.L. 111-296) on December 13, 2010. HHFKA is comprehensive and comprised of numerous sections with the purpose of improving child nutrition. It authorizes funding and sets policy for the USDA's core child nutrition programs. Those programs are the NSLP, the SBP, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), the Summer Food Service Program, and the Child and Adult Care Food Program. Some major areas of change within the HHFKA are as follows: promoting the SBP; expanding access to meals served through eligible afterschool programs for at-risk children participating in the Child and Adult Care Food Program (CACFP), improving the school environment to teach our children healthy habits that last a lifetime, and improving the nutrition quality of food sold at school by updating nutrition standards for school meals based on expert recommendations from the IOM, using science-based standards for all other foods sold in school, increasing funding for schools, providing school authorities with resources, training, and technical assistance to help schools achieve and monitor compliance, and providing healthy offerings through the USDA Foods Program (USDA, 2011, *Healthy, Hunger-Free Kids Act Quick Facts*).

This is the first time in 15 years that the USDA has changed nutrition standards for meals. Over 32 million children eat lunch at school daily, and about 11 million eat breakfast. They consume about 30% to 50% of their calories at school. These new meal standards are designed to improve their health (Hellmich, 2011). The changes in the proposed meal patterns include the following: decreasing the amount of starchy vegetables, reducing sodium in meals over the next 10 years, establishing calorie limits,

serving only 1% or fat-free milk, increasing the daily servings of fruits and vegetables, increasing the availability of whole grains, and minimizing trans fat.

The second cross-state policy evaluation was completed by accessing the school breakfast and lunch standards of all 50 states and the USDA proposed school breakfast and lunch meal patterns. Data to review for this study were retrieved from state legislation, The SNA policy index (2010), the NASBE Healthy Schools policy index (2011), IOM report "School Meals: Building Blocks for Healthy Children" (2009), P.L. 108-265 (2004), P.L. 111-296 (2010), and the USDA Food and Nutrition Service Proposed Rule 7CFR, Parts 210 and 220 (2011). The descriptive indicators were identified verbatim from the proposed USDA meal pattern changes. The breakfast meal pattern indicators are (1) fruits, (2) grains, (3) meats/meat alternatives, (4) fluid milk, (5) calories, (6) saturated fat, (7) sodium, and (8) trans fat. The lunch meal pattern indicators are (1) fruits, (2) vegetables, (3) dark green vegetables, (4) orange vegetables, (5) legumes, (6) starchy vegetables, (7) grains, (8) meat/meat alternative, (9) fluid milk, (10) calories, (11) saturated fat, (12) sodium, and (13) trans fat. The meal patterns were divided into breakfast and lunch with subgroups for grade levels. The grade level subgroups for breakfast and lunch are K-5, 6-8, and 9-12.

The states' nutrition standards were scrutinized and studied to determine if they are in accordance with the proposed meal pattern changes. If a nutrition standard matched exactly to the descriptive indicator, it was coded as compliant. If there was no nutrition standard or an incomplete standard for a descriptive indicator, it was coded as non-compliant. If a nutrition standard could not be determined, it was recorded as indeterminate.

Based on the numerous benchmarks for the breakfast and lunch meal patterns, I have grouped the summary and conclusion section according to patterns that have emerged from the data.

Breakfast Meal Patterns (K-12)

There is little fluctuation among all eight indicators. The data indicates 80% non-compliance compared to 10% compliance.

Lunch Meal Patterns (K-12)

Similar to breakfast meal patterns, there is little variation among all twelve indicators, and the lunch meal pattern data are consistent with the breakfast data: 80% non-compliant, 10% compliant. The lunch meal includes five vegetable indicators that are not part of the breakfast meal. Interestingly, 60 % of the vegetable indicators reveal some of the higher compliances, between 10% and 14%.

Summary and Recommendations

According to Fowler (2009), once an evaluation report is received, the stakeholders have four options: (1) inaction, (2) minor modifications, (3) major modifications, or (4) termination. (pp. 327-328) Inaction refers to doing nothing and keeping the current policy as is. Stakeholders choose to make minor modifications in a policy if the evaluation report recommends only a few changes that would not significantly alter the original policy. There are four categories of major modifications, based on Brewer and deLeon (1983) and referenced by Fowler (2009). They are as follows: (1) replacement, which puts a new program with the same objectives in place of the old program, (2) consolidation, which combines two or more entire programs or parts of programs into one, (3) splitting, which removes one aspect of the program and develops that into a

separate program, and (4) decrementing, which cuts the program's funding substantially, thus reducing the amount of money available to most parts of the old program. If a policy is terminated, it is discontinued. When this choice is selected, it is "usually because the government's objectives have shifted" (Fowler, 2009, p.328).

The first purpose of this study was to summarize and analyze each state's compliance with current nutrition policy and best practices, defined as the recommended components for effective nutrition policy in existing research. Based on the research and my results, the states fared fairly well within the six components studied. I would recommend making only minor modifications to the areas studied, such as defining how long children should be given to adequately eat their lunch. This amount should follow the current research that recommends giving children at least 20 minutes to consume their food. The 20 minutes should not include time to use the bathroom, wash hands, and stand on the lunch line. That extra time should be added to the 20 minutes making the total time for lunch at least 30 minutes.

The second purpose of this study was to summarize and analyze each state's compliance with the proposed meal pattern changes for school lunch and breakfast based on the 2010 USDA Dietary Guidelines. The purpose of analyzing the states' current breakfast and lunch meal indicators to the proposed changes was to enlighten the states and public concerning areas that need improvement. As the data reflect, the states' compliance for both breakfast and lunch meal patterns is a minimal 10 %. Based on the research and my results, I would recommend making major modifications to the school breakfast and lunch nutrition guidelines.

Since July 2012, states are required to implement the breakfast and lunch meal pattern changes. However, in the public's eye, these changes are not going over well. "According to a new Rasmussen Poll, only 23% of those surveyed think the federal government should have a direct role in setting the nutritional standards for public schools" (Winkler, 2010). Opponents to these meal pattern changes believe that the government is overstepping its power. The changes are costly. Other than USDA Commodities, the food industry determines food prices. Foods dubbed as "healthy" cost significantly more and are sold in smaller net weights than their typical counterparts are. Included in the HHFKA, the federal government will increase the reimbursement of schools that meet the new standards by six cents a meal. In order for schools to comply with the meal pattern changes, they will have to charge more for the meals, and the serving size will decrease to accommodate the caloric restrictions. This will unveil another issue--that of children feeling hungry and listless due to the smaller serving size and decrease in caloric intake.

Proponents of these meal pattern changes believe the changes will make a significant difference in the lives of America's schoolchildren. Children will learn good eating habits and how to make healthy food choices. Agriculture Secretary Tom Vilsack says the government is not trying to "dictate" what people eat but is trying to help parents make sure their youngsters "are as healthy, happy, productive, and successful as God intended them to be" (Hellmich, 2011).

The Role of Superintendents and School Leaders

As reported in this research, all states participate in the NSLP, but not all participate in the SBP. Just because every state participates in the NSLP, not every district within a

state participates. Participation is a choice; if a district wants the federal meal reimbursement, they must apply and have a population eligible to receive free and reduced-price meals. To be eligible to receive free school meals, a student's family income must be 130% or less of the poverty level. To receive reduced-price meals, the family income must be between 130% and 185% of the poverty level. In addition, the student's parent must submit an application, and the school administration must certify the student. A recent government study found that 92% of students attend schools that participate in the NSLP. Typically, 56% of the students who attend a school with the NSLP select an NSLP lunch. Family income significantly affects student participation. Of all the students certified to receive a free meal, almost 80% participate; for students certified to receive a reduced-price meal, more than 70% participate; and for students paying full price, less than 50% participate. This same study identified factors affecting the likelihood that a student will select an NSLP lunch.

- Schools offering meals with less than 32% of food energy from fat have lower participation rates than other schools. Since students tend to prefer higher fat content meals and the new dietary guidelines call for lower fat content meals, more students may choose not to participate in NSLP meals.
- Students certified to receive free or reduced-price meals are more likely than students who pay full price to select an NSLP lunch. In addition, the cost of the meal affects participation; schools with lower prices have more participation.
- Females are less likely to participate than males, and younger students participate more than older students do.

- Students in urban and suburban schools are less likely to participate than students in rural schools.
- Students in the Southeast, Southwest, and Mountain states are more likely than students in the Northeast and West to participate.

In addition to information on the NSLP, the study provided insight on the SBP. Nationwide, 10% of all students eat an SBP breakfast. About one-half of the students attend a school that offers the SBP and 19% participate in the program. Additional factors affecting the likelihood that a student will select an SBP breakfast were also identified:

- Students certified to receive free and reduced-price meals are more likely to select an SBP breakfast than pay full price. Interestingly, the amount of the full price does not appear to be a factor.
- Male students are more likely to participate than female students, and older students are less likely than younger students.
- Low-income students who are not certified to participate in a free or reduced-price meal program and must pay full price are more likely to select an SBP breakfast than higher income students.
- African American and Hispanic students are more likely than White, non-Hispanic students to participate.
- Students in urban and suburban schools are less likely to participate than those in rural schools (USDA, 2007, *SNDA-III Report*).

During the Reagan administration (1981-1989) the states were given more authority over education and the federal government had less authority (Fowler, 2009). That trend

lasted through George H.W. Bush and Bill Clinton and began to waver under President George W. Bush with the controversial No Child Left Behind Act. Then, in 2009, the Obama administration began a full-fledged recapturing of the federal government's role in education when it passed HRFKA in 2010. Previously, superintendents and school leaders could effectively perform their jobs without paying much attention to the outside world (Fowler, 2009). Now, these same school leaders are forced to comply with excessively strict school meal guidelines in order to receive funding from the federal government for their meal programs.

When policy is implemented, changes occur. These changes may take the form of minor adjustments or major transformations (Mazmanian & Sabatier, 1989), but change happens. The HRFKA does not lend itself to change. As this research shows, the HRFKA is detailed and specific with copious nutrition guidelines reflecting what may and may not be served during school meals. School leaders have no choice but to adapt these standards or forfeit federal money. The recent research on the public's opinion of the nutrition standards concludes that they are perceived as overbearing, lead to more wasted food, and leave our children hungrier. So, how can school administrators implement this policy and address the issues that this research has identified?

Has Nutrition Standards beyond the USDA (NSLP/SPB) Requirements

Just getting school meals to the new nutrition standards is daunting; thus, going beyond the requirements is improbable. Fortunately, the standards are specific and detailed. The challenge is to introduce the new meals with a positive spin and to create food that is "kid-friendly" and nutritious. School leaders must work closely with their food service provider, and if necessary, switch to a company that has agreed to meet the

updated nutrition standards, such as ARAARK, Sodexo, and Chartwells. In addition, many schools across the country have found that scheduling a school wide or district wide tasting day provides useful feedback on different menu options. Alternate menu choices are presented to the students, faculty, staff, and parents, who taste them and rate the items. The Tampa, Florida, school district has a “fresh flavors food show” every year in which 250 students from Grades 3 to 11 sample and rate different menu concepts, such as fish tacos, sweet-potato salad, and spinach lasagna (Hellmich, 2012).

Has an Adequate Time-to-Eat Policy

Students should have at least 20 minutes to eat their lunch, not including bathroom time, travel time, and waiting on line. The superintendent can meet with his principals and brainstorm how the school day can be restructured to accommodate longer lunch periods. It might require hiring more personnel so that the line moves faster or shaving a few minutes off each class period. My local high school follows a block schedule that cycles through A, B, C, and D days. On any given day, one class period is dropped, but the remaining periods are almost 60 minutes long and the lunch period is also 60 minutes.

Promotes Fruits, Vegetables, Whole Grain Products, Low-fat and Fat-free

Dairy Products, and Healthy Food Meal Preparation

This is related to the mandated meal pattern changes but can be taken to a higher level district and be school wide. A superintendent can kick off “healthy schools” and “healthy eating” initiatives district wide with the support of his principals instead of leaving each school to embark on its own “healthy eating” journey. My school district has four elementary schools and not every school has promoted healthy eating beyond the lunchroom. For example, two schools have strictly adopted a healthy snack policy, while

the remaining two schools only encourage parents to pack healthy snacks. Just recently, I received a letter from my son's physical education teachers announcing a school wide fruit, vegetable, and water challenge. Students who bring the snacks that meet the challenge will help their class win a reward and an extra gym period. Only one of the four elementary schools has this challenge. If the superintendent proposed this and similar challenges district wide, more students would reap the benefits.

School superintendents and school leaders are in a position to implement school nutrition policy as per the federal government and advocate changes. Their feedback as to how their schools are managing the changes and the challenges they are facing must be reported to the state and federal governments. School leaders must be active and informed because they "are in a position to exercise influence on the policy process at the state and federal levels" (Bryson & Crosby, 1992, as cited in Fowler, 2009, p. 19).

Schools must implement the new nutrition guidelines for school meals as stipulated in the HHFKA of 2010 in order to receive federal reimbursement for school lunches served. However, some districts are retaliating. A recent article in *Education Week* identified two New York schools, the 4,200-student Niskayuna Central School District and the 1,200-student Voorheesville district, that have decided to sacrifice federal monies so they can opt out of the mandated meal pattern changes. Both districts reported that they implemented the menu changes and the students did not like them (N.S., 2013).

In addition to New York, districts in the California Bay Area have opted out of the NSLP. The California schools are in wealthier districts where parents can afford paying more for lunch. Lunches in those schools are \$6.25 but include food choices such as sushi, edamame, pot stickers, and organic fruits and vegetables. Parent volunteers serve

the lunches and, included in the price with each lunch purchased, an extra dollar is raised for programs in the sports and arts (Siegel, 2011). In order to opt out of the NSLP, the district must still provide assistance to those eligible for free and reduced meals. To provide that assistance, out of pocket, a district must be in a middle to upper income bracket. Hence, opting out is only for those who can afford it.

My research identifies the few states that have compliance in both effective nutrition policy and meeting the strict USDA breakfast and lunch meal pattern standards. Due to the low compliances, I conclude that even though the federal government enacts legislation, it is the leadership at the state level that affects the degree of implementation the states exhibit. Perhaps the most effective approach to decreasing childhood obesity is found at the state level, and the federal government should back off. Another question that arises from my research is that if the federal government is concerned with decreasing childhood obesity, then why is it attacking only one factor of obesity? The research substantiates that there are two main contributors to childhood obesity, nutrition and physical activity. HHFKA addresses nutrition but leaves physical activity to the state. It would appear that by addressing only one half of the obesity equation, the federal government's battle against obesity is half-baked.

Is the HHFKA actually dividing the nation? The research clearly supports that it is burdensome and unattainable for the majority of the states to comply with the new federal meal standards. In addition, the ones who have to eat the meals, the students, are dissatisfied with the food selections and find them unappetizing as well as being too small to satisfy their adolescent appetites. In a federal program designed to feed the

hungry and less fortunate, it is hypocritical that this program is leaving children, whose main source of nutrition is their public school, hungry.

Future Research

School Wellness Policy is multidimensional; nutrition is one dimension. Nutrition policy has several components. For this research, I studied nutrition policy in general and one particular aspect of nutrition policy: school breakfast and lunch nutrition standards. Whereas I made individual recommendations for future research in the fields of this study, I did not exhaust the research possibilities for nutrition, let alone school wellness as a whole. Areas of future research include nutrition education for students and staff, nutrition standards for competitive foods or foods sold outside school meals, standards for school food service, which states are assisting their local school districts with the cost of school meals beyond federal funding, recommendations for effective farm-to-school and adequate time-to-eat policy, which states and school districts are opting out of federal meal reimbursement, and standards for school wellness policies, physical activity, and physical education.

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