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Obesity and the Personal, Financial, and Social Implications

"He had had much experience of physicians, and said 'the only way to keep your health is to eat what you don't want, drink what you don't like, and do what you'd druther not!'"

-Mark Twain, *Following the Equator: A Journey Around the World*

Personal health is often a topic that is very private. Healthcare professionals are sworn to secrecy about their patients. The obese and unhealthy often ask why their problem is anybody else's business. The truth is that every taxpayer and every policy holder is paying for a substantial amount of medical expenses due to diseases related to obesity. In 2012 New York City Mayor Bloomberg's administration put forward a proposition to limit the size of beverages sold in New York City. Most of the opposition that has been put up against such laws revolve around first amendment rights of freedom. What most defenders of obesity fail to realize is that obesity is not only an individual's problem but a societal problem predicated around what people want and not what they need.

Obesity is the result of ingesting more calories than used over an extended period of time. The current state of the obesity epidemic is due to an environment where overeating is promoted while physical activity is not given any importance. Some environmental influences include the prevalence of calorically dense foods, less nutritious foods, advertisements, bigger portion size and increased stagnancy (French 2003). Obesity is not only an aesthetic quality; it does take a toll on a person's health. Like the Twain excerpt implies items that most people do not want to eat or drink are generally the healthier products. Vegetables, whole grains, and unsweetened beverages are generally less palatable and therefore less wanted. Obesity has led to the increase in the incidence of type 2 diabetes, asthma hypertension, sleep apnea, osteoarthritis, and gynecological complications (Akil & Amhad 2011). Type two diabetes was virtually non-existent in adolescents 30 years ago. Now it accounts for half of new diagnoses for diseases among children. A tough course of action is to be taken in order to reverse this trend.

"It was the institution of the 'free lunch' I had struck. You paid for a drink and got as much as you wanted to eat. For something less than a rupee a day a man can feed himself sumptuously in San Francisco, even though he be a bankrupt. (American Notes Rudyard Kipling)" In reality there is no such thing as a free lunch. Someone has to pay the lunch in some way or form. The pleasure of overeating may have a temporary euphoria on those who

indulge, the longer lasting negative effects of obesity make overshadow the justification for ecstasy.

What has triggered the increase in obesity?

“Those who are afraid of freedom are those who cannot trust us to live in them. Trying to keep the law is actually a declaration of independence, a way of keeping control” —
W. Paul Young, *The Shack*

The freedom of choice is one of the benefits being a citizen of a free country. The decision to eat to the point of obesity cannot be governed. Food addiction and the causes of obesity are deeply rooted in complex societal, cultural, psychological, and genetic trends (Finn 2005). When looking at the food environment over the last 30 years it is important to observe the marketing campaign that has been behind it over the last 20-30 years as well. There are very little marketing campaigns for vegetables like carrots, lentils, or spinach as there is no collective corporation that feels they need to advertise spinach. Food marketing generally targets calorie dense, low nutrition food to children which has been proven to have a lifelong effect on the eating habits of that person through adolescence and into adulthood (Harris & Graff 2011). Advertising is done through television, internet, magazines, sponsorships and billboards. In 2006 the food industry spent 1.6 billion dollars on advertisement for children to which 900 million dollars was directed at children who were under the age of 12 years old. Most children do not have to power to go out and buy most of the unhealthy foods that they eat. However, their parents have been weak willed and have been duped into supplying children with foods that are not necessarily what the kids need in order to be properly fed and maintain proper nutrition. Research also shows that the exposure of children to advertisements leads to the ingestion of snack/calorically dense foods immediately after the exposure. A U.K. study done reports that a quarter of school children surveyed ate junk food before school. Crisps, fizzy high sugar drinks, sweets and chocolate products were the most popular (Cullen 2011). Childhood obesity is proven to lead to adult obesity and prolonged health issues. The unfortunate truth for children is that “resisting advertisements for the highly tempting products commonly promoted also requires the ability to weigh long-term health consequences of consumption against short-term rewards.” The ability to do this is not fully developed until the early 20’s (Harris & Graff 2011).

An interview with a specialist in weight control in New York City hereby referred to as Dr. T who has been serving the New York Metropolitan area for over 25 years:

Q. What do you think is the main contributor to obesity diet or inactivity.

A. From what I have seen the biggest factor is diet. Lack of exercise has definitely played a role the persistence of obesity but diet has been by far the biggest factor.

Q. What specific foods do your patients consume that are detrimental to their health.

A. Sweetened beverages, such and sodas and non-fruit juices are being consumed by many of my patients two to three times a day, sometimes even more than water, so we make it a priority to eliminate these foods in our patients diets.

Q. What is the youngest patient you have had before.

A. I have had severely obese patients who were as young as four years old come into my clinic. It is never too early or late to implement a change in order to change.

Q. Have your patients responded well to regimen change or do they need drastic surgeries in order to see a change.

A. If the patients are coming to see me, a specialist then I know that they are very serious about changing their lifestyle. Unfortunately many people are able to initially lose weight but then gain the weight back once they stop coming for check-ups. Bariatric surgery has become a solution to those who are having trouble controlling their

Q. Do any of your patients have monetary incentives to lose weight such as their insurance providers.

A. Many of my patients are offered incentives by their insurance companies to lose weight. This in combination with wanting to just be healthy is what leads them to my clinic.

Dr. T., an expert in weight control at a clinic based in NYC, believes that the biggest contributor to obesity is diet. Increasing intake of carbohydrates as well as decreased activity has created the perfect environment for obesity. Children as young as four years old have been to Dr. T's clinic which is a recent trend. Childhood obesity is important to curb because the patterns of food continue as people continue onto adolescence and into adulthood. Psychologically the underlying cause of obesity is stimulation (Trachtenberg 2009). Food stimulates in the same way that drugs or sex does. Some people can control the urge for stimulation while others cannot, which leads to food addiction. Dr. Kessler the former head of the food and drug administration explains that the neuro-circuitry for highly palatable foods is formed as in childhood and these circuits constantly wants to be stimulated. Hence the condition of eating all the time is an addiction and cannot simply be treated as a lack of fortitude or discipline but as an addiction. This suggests that obesity prevention could lie in limiting the exposure to junk food early in life. The school environment is a big factor to the health of children. As a substantial amount of time is spent in the schools the percentage of daily calories intake at the school ranges anywhere from 20 to 50 percent. (Story et al 2009) The presence of foods which compete with the nutritionally regulated school meal programs come from vending machines, snack bars, school stores and local businesses. This competition to the school lunch program interferes with opportunities to make a change as the children in most cases have become accustomed to the options which they already have.

A 28 year old woman referred to as Ms. D who works in an environment where she sits all day in front of a computer can be considered obese as her BMI is well over 30 and possibly near 40. Ms. D is well known in her environment for being a good baker and encourages others to bring in baked goods in celebration of employees birthdays. The issue that arises is that there are many birthday in a year. Her obsession to satisfy others creates a work environment that is loaded with sweets and excess calories that most of the employees willing to partake in. Hence this place of employment turns into a breeding ground for overeating and the perpetuation of obesity. People do not suggest bringing in fruit or less calorically dense foods but instead cupcakes, brownies, cookies, fried dough, and an assortment of candies which may last for multiple days thus providing several days of overindulging. Certainly there is no external pressure to consume the foods, but internally the neuro-circuits jump at the chance of being stimulated hence pressuring individuals into specific food decisions. In the 1920's, building, mining, and agriculture made up 25 % of the work force. Over the course of the next 60 years this would dwindle down to 10 percent% while the office jobs jumped from 15% to 35% by 1981, consequently resulting in more and more people being sedentary (Davey 2004). Increased automobile use has caused a decline in the amount people walk daily and has also created an environment where the use of bikes is sometimes very dangerous. Therefore people opt out of using lesser forms of transportation and use vehicles to get around.

Mrs. R a 48 year old Latina woman who has chronic diseases like diabetes, mellitus, hypertension, and dyslipidemia reveals that obesity is partly problem of behavior and ignorance not economics. The patient's history suggests that she has been given some of the tools to manage her illness, but initially she showed no signs of wanting to improve much to the dismay of her physician. (Ferrer & Carrasco 2010) How easy is it to get to a grocery store for food shopping? Do you have the chance to be physically active several days a week? Can you afford to join a health or fitness club where you can exercise? This patient is unable to do any of these tasks with ease due to transportation as well as time management issues. Her husband who is a diabetic like her does not like the recommended foods in their regimen and only eats the recommended food twice a week. When it comes to the preparation of her meals she does not have time because she babysits her grandchildren and by the time she gets home she sometimes settles for unhealthy alternatives such as fast food or processed foods (Ferrer & Carrasco 2010).

Decades ago, physical activity was directed to children by their parents in the form of go outside and play. Today with more and more negative media surrounding pedophiles and kidnapers parents are reluctant to let their children play outside. The more prevalent type of parenting, risk aversive parenting, coupled with the increasingly busy parental lifestyles have created a generation of children that are glued to television screens, computer monitors, and handheld devices. In temperate climates the summer is generally a time of increased activity for children but this is not necessarily the case anymore. Cullen (2012) calls it "times of

unlimited food and no practical need to be physically active.” . Walking, playing, running, jumping and simply moving serves to help children stay away from obesity. In addition to activity levels, eating habits are also controlled by parents. In the past the home cooked meal was very important to the family environment and tradition. Today the fast paced lifestyles of many families include extracurricular activities and second jobs for the parents, which keeps families from eating fresh home cooked meals together. Instead many parents are substituting frozen or prepackaged foods as well as chain restaurants and fast food as a means of providing nutrition to their children, which is leading to a increase palatability for these foods and bad eating habits.

Global effects of Obesity

With all major nations implementing or trying to implement some form of national healthcare is it important to talk about personal responsibility. The burden of healthcare on the economy is based on how the citizens of a nation treat themselves. Since the US healthcare system has not yet been fully initiated, the Canadian healthcare system serves as a good indicator as to how much obesity will have a toll on the economy in the United States due to proximity as well as similarity in food markets (Birmingham et al 1999).

Birmingham investigates the costs of illness, which is the process of examining the expenditures due to the illnesses caused by obesity which included postmenopausal breast cancer, coronary artery disease, colorectal cancer, endometrial cancer, hyperlipidemia, hypertension, pulmonary embolisms strokes and type 2 diabetes. 2.4% of expenditures related to these diseases deemed obesity to be the determining cause. In Canadian dollars in 1997 this amounted to 1.8 billion dollars. In the United States, obesity accounts for 20.6 percent of health care expenditures, 190.2 billion dollars per year (Kell 2012). To put this into perspective obesity has now surpassed smoking in terms of costs. The high cost of being significantly overweight manifests itself in a variety of ways. Increased insurance premiums subsidize the added medical charges incurred by the obese to the surprisingly dramatic impact our collective pounds has on energy (transportation) costs. According to Sheldon Jacobson of the University of Illinois, the extra weight being carried by vehicles amounts to one billion additional gallons of gasoline a year which means that if all extra poundage was removed it would account for a 1 percent national saving in energy. Not only would there be savings in energy but they pounds lost would result in less medical problems which would cut costs in other areas as well(Ungar 2012).

Psychological Effects of Obesity

For many people being overweight or obese is just a cosmetic issue (Finn 2005). It is also important to understand the social impact of obesity. Generally obesity causes negative peer attitudes as well as negative self-image, job discrimination, absenteeism from jobs and

school, as well as underachievement in education. (Birmingham et al 1999) A study also conservatively estimates that social restrictiveness also plays a toll on the economy because people who are obese are less likely to spend money and create money hence resulting in a loss of productivity. It has been proven that people at the extreme ends of the BMI scales i.e. anorexic people and morbidly obese people, are more likely to suffer from depression at some point.

Obesity and the fear of being overweight leads people to do things that might potentially be detrimental to their health. For example China has the highest usage of diet pills as 37 percent of people try to lose weight with the help of a pill. This data tends to gravitate towards women as 49 percent of Chinese women and only 18 percent of Chinese men admit to taking diet pills. Smoking cigarettes has been proven to keep the pounds off so many people have turned to cigarettes in order to lose weight. However, the longer this technique persists, the more ailments will arise from it. Research into possible links between obesity and depression in children found that there is no straightforward association. The relationship is complex and mediated by age and gender with obese adolescent girls seemingly most likely to be at risk of depression in later life. (Cullen 2011) In a surprising and alarming study done on 11 year olds 12 percent of girls and 16 percent of boys reported being bullied for being overweight or obese, when actually half of the sample were actually overweight or obese(Cullen 2011). There is an obsession that even causes little children to hurt each other for sport. Studies also show that obesity may lead to increased risk in engaging in activity that is risky such as drugs, cigarettes, and alcohol. In order to compensate for lowered self esteem, these activities are sometimes perceived to be cool and young people will engage in them in order to increase popularity. The suggested trend with most stigmatizations is that as time progresses people become more accepting of those who are different. With obesity is actually reversed. Taken from a study of weight based stigmatization and teasing (Russell-Mayhew et al. 2012) negative views of obese children are even higher than they were 40 years ago. In fact "children demonstrate weight bias by associating obesity with a number of undesirable traits and preferring to associate with non-obese peers. Children with more negative attitudes towards weight are more likely to rate an obese peer negatively and tease and bully children who appear overweight, with few cultural differences.

There also seems to be an association between obesity and underachievement in schools. The research done in by Dr Karen Cullen of the British Psychological Society shows that 1) obese children miss more days in school than regular children. 2) Obese children may experience low self esteem not only in looks but in personality and education. They may think of themselves as stupid and therefore not apply themselves fully in school. 3) Obesity-related bullying may result in behavior that is detrimental to the school environment and this may lead to expulsions and suspensions due to frustration. As bad as the physical complications of obesity are, the social complications tend to fuel children's desire to lose weight(Cullen 2011).

What is ironic about being obese is that the disease itself can trigger an individual to perpetuate it. People use eating as a means to cope with the pain of bullying or low self esteem, when the very cause of their low self esteem is caused by eating and inactivity. Those who have a BMI of more than 35 are more susceptible to emotional eating (Buckroyd 2011). Buckroyd's paper observes that a large portion of the obese population persistently use food for emotional regulation with the result that they become more obese. Since it is part of their continuing survival and emotional strategy they do not surrender their eating behavior until or unless they find some a better way of managing their feelings. In treatment those who had made few attempts to lose weight before were more likely to respond well to change but even still changing a person's eating behavior people, is a psychologically and emotionally far more complex task than has so far been recognized.

Food Industry and Governmental Actions

"The ones who are crazy enough to think that they can change the world, are the ones who do."- Steve Jobs.

The financial implication of governmental intervention in the food industry has led to a multimillion dollar lobbying industry to which its sole purpose is to prevent legislation that would hinder the sale of their foods. In 2012 congress approved a measure that qualified pizza as a vegetable in school lunches. This measure was only possible through a careless attitude and a non-commitment to the health of the children. Congress declared pizza a vegetable in order to protect it from the nutritional overhaul in the school lunch program (Wilson & Roberts 2012). The food industry knows that it can change the world because they have lawmakers in their pockets will to make decisions that benefit their businesses. In Lauren Oliver's novel *Delirium* she writes, "I guess that's just part of loving people: You have to give things up. Sometimes you even have to give them up." The junk food industry does not loves people, they love the money that is associated with the people that buy their products, but ultimately they do not try to change the status quo with respect to obesity.

While the nutritional value in the tomato paste used in the pizza is comparable to one serving of vegetables the nutritional insignificance of the cheese and the bread used to make it do not make up for the benefits of the pizza. Wanting the best for society as a whole suggest that an individual love's people and wants the best for them. The losses that would result from the ban of pizza in schools would probably be significant. But the impact that it would make on children's lives would be even more significant. It would display to them that perhaps pizza is a bad food and should not be eaten all the time. The ban of pizza in schools would need to be followed up by the ban of sodas, candy, and cookies which would be quite a toll on the school lunch system and school lunch profits. Schools rely on the sale of junk items in order to make profits that help keep the subsidized school programs going. So yet again financial instability serves as another reason to not help children learn the proper foods to eat. Children are most vulnerable to making bad food choices even when the know the repercussions.

However they are too young to fully comprehend what the repercussions really mean. Children know that candy, soda, and junk food in general will make them overweight and eventually obese. In fact they usually have plenty of examples around them that show that this is the case however children will choose to satisfy the fundamental desire for pleasure rather than sacrifice their pleasure for the better.

Ultimately, government is supposed to protect the public's welfare and lobbying undermines many efforts in this arena(Viswanathan 2011). Every time there is an attempt to reform food in the schools, lobbyist provide financial incentives for those who can make a positive change to not make a change or to make a change that is in their favor. The Coalition for Sustainable Meal Programs has pretended to act in the favor of children. In fact they have said that they are looking to provide healthy meals for children and fighting hunger. Under this mask they have supported serving fruit with added sugar and keeping the sodium levels in food at their current levels(Simon 2011). The justification behind these decisions revolve around obvious but misleading facts that sodium is an essential mineral, therefore it is required in food. The same case can be made for the high levels of fats, carbohydrates, and cholesterol in the foods. The fact that lobbyist have the ability to change policy or effect policy changes means that those in government as well as the processed foods industry aren't willing to sacrifice wealth and are willing to spend money to ensure that their wealth will continue. In 2011 food lobbyists in the dairy, livestock, poultry, eggs and food processing spent 40 million dollars on lobbying in the federal (Flynn, 2012).

"The demands of a free populace, too, are very seldom harmful to liberty, for they are due either to the populace being oppressed or to the suspicious that it is going to be oppressed... and, should these impressions be false, a remedy is provided in the public platform on which some man of standing can get up, appeal to the crowd, and show that it is mistaken. And though, as Tully remarks, the populace may be ignorant, it is capable of grasping the truth and readily yields when a man, worthy of confidence, lays the truth before it." -

Niccolò Machiavelli, *Discourses on Livy*

In 1991 the food industry was asked to develop 5000 new products by the year 2000 that were low in fat in order to combat obesity as well as heart disease. Food manufacturers were able to meet this goal in half the time (Finn 2005). This shows that if given direction the food industry is capable of making change for the better. This correction was most likely a marketing ploy in order to trick people into believing that they cared about them. In *Hamlet* Shakespeare writes, "One may smile, and smile, and be a villain!" No matter how much the junk food industry smiles, they are the villains to the many obese. The villainous oppressors of the junk food industry know that they can permeate the minds of those who are less informed.

Much of the natural flavor from food items comes from the fat within the food. So low fat foods tend to try to increase flavor and palatability by adding sweeteners and artificial ingredients. Some food and beverage companies are taking action in order to reduce calories, trans-fat, sugars, cholesterol while preserving the flavors and feel of the food. General Mills, Kraft, and PepsiCo invested 20 million in 2009 to the Healthy Weight Commitment foundation which does show some admission of guilt on their part. Even companies like Hershey, Nestle, and Mars are promoting their products in smaller packages while increasing their margins in order to keep profits the same (Glover, 2009). The truth is however that food companies will only do so much to curb food consumption. There are after all junk food companies and their profits and success rely on the consumption of their foods. The people who are responsible for ensuring that people of all ages follow a healthy diet are all of the people, not just the people producing the bad food. It is therefore naive to expect them to want to truly help the public reduce food consumption.

The idea of conflicts of interest are most important when dealing with large companies. When dealing with pharmaceuticals, they want people to get sick, when dealing with the food industry they want people to eat and drink. The concept of junk food companies sponsoring athletic teams sends a mixed message. For example in the 2012 Olympics Coca Cola had an advertisement that played over and over again on the online streams of the games. Strategies to promote physical activity like the Olympic games or in professional sports are only a smokescreen to divert attention from the negative health effects of its products. (Gomez et al. 2011). Not only do they promote physical activity, they also block legislation that would interrupt the sale of their product, which is understandable because a business must protect itself but at the same time it is selfish and inconsiderate.

There is much debate as to what people should be allowed to buy with food stamps and EBT cards. Logically there should be some limit as to the types of foods that can be purchased. As of today people are allowed to buy junk food which includes soft drinks, candy, cookies, snack crackers, and ice cream because they are actually food items ("Eligible food items," 2012). These items do provide nutrition. According to an employee at the USDA Food and Nutrition Service, the Supplemental Nutrition Assistance Program allow EBT cards to purchase items that have a nutritional label. Anything that has a supplemental label like alcohol, tobacco, vitamins and medicines and surprisingly hot food is not allowed to be purchased with EBT cards. Junk food, eaten in amounts that are not tolerable by the human body, leads to the storage of fat and increase in sugar levels. Calorically dense foods do provide pleasure but tend to also provide an adverse response of unhealthiness in the long run when eaten in large amounts. The hardest question to answer is what qualifies something as nutrition and how can we continue to provide a free lunch that is efficient and beneficial. While there is little evidence that supports that food stamps and nutrition assistance programs

are related to obesity it is my inference that there is a correlation between the use of nutrition assistance programs and unhealthy eating habits.

Logic says a banana is more nutritious than a can of soda because it has more vitamins and minerals even though they both can contain the roughly the same amount of sugar. If someone manufactured soda or a fruit juice with more vitamins and minerals than a banana then one could make the case that drink is more nutritious than the banana and therefore a person should be allowed to buy that food. For those who are in need of food and are being assisted it would seem that any food that provides energy should be allowed and should be sufficient for achieving that task. However, the most obvious abuses of nutrition assistance fall into the category of junk food. Cookies, cakes, ice cream, and candy are a few of the obvious abuses but others like chips, fruit juice, and cereals fall into a category somewhere in between healthy foods and junk foods. Fruit Juice is generally high in sugar but fortified with vitamins which do serve to provide many people with vitamins. Breakfast cereals tend to be high in sugar but well-fortified in vitamins and minerals which add to the confusion as to what should be allowed and what should not. As stated before there are clear abuses of tax dollars and then there are gray areas. Foods that are void of any nutrition such as diet sodas and other diet drinks should not be allowed to be purchased with nutrition assistance benefits because they are simply a waste of dollars and nutrition. Every dollar that goes into the food program should be going towards making a person's life better and giving them a chance to live another healthy day rather than possibly contribute to disease. There is absolutely nothing wrong with a handout/free lunch. People are fortunate to have a net to fall on when they fall into economic hardship. That net is being held by the hardworking taxpayers; therefore taxpayers have a right to scrutinize the nutrition assistance programs.

There is nothing that is keeping people from buying healthy foods but is it possible that there is a reason why people are buying unhealthy foods. Even when healthy food is available at an affordable price, many people will not choose the foods that are better in taste and the foods that they are accustomed to. Education and discipline play a much better role as to how people make decisions rather than control. Trying to control a certain population by telling them what they are allowed to eat and how much they are allowed to eat is more difficult because of the simple act of rebellion. Similarly a person can be taught what is healthy and what is unhealthy and still choose to eat in an unhealthy manner which means that ultimately choice is the biggest determinant of diet. Much like people choose to do with money they have worked to earn, people on nutrition assistance programs have the option to choose the unhealthiest of foods.

It is important to many people to save money when they go shopping. They do this by buying in bulk or by buying supersized containers. Buying processed foods allows for cheaper food costs as well as increased quantities of food and longer shelf life. In this way it makes sense to buy what is more available rather than focusing on how healthy it is because of pure

economics. In an FDA report about food restrictions they ask the question “Are “healthy” foods characterized by the absence of nutrients to be avoided, the presence of desirable nutrients, or a combination of both? ("Implications of restricting," 2007).” The logistics of implementing such a system where the foods that people purchased using tax dollars were monitored would be very expensive for the government and for store owners so it could create more of a stigma associated with food assistance. Imagine being at a supermarket and being denied foods at the checkout because they were too unhealthy. Situations like this would be met with great opposition. In order for the free lunch to persist it does not need to be the strictest program in the world but there must be some form of discipline when it comes to the types of food purchased. The school lunches in public schools should be healthier and the government’s attitude towards food should be a stricter one. Once this is achieved then the message will be passed along to the consumer that in order to get a free lunch it has to be a healthy one. If free lunches are used to help disease persist then there is something extremely wrong with the system and policy needs to be changed. More research should be done to see what kind of purchases are being made with food assistance cards and then legislation should be addressed based on obvious abuses of funds.

Strides are being made in order to bring incentives for people to eat healthier foods within the SNAP program. The Healthy Incentives Pilot is a program designed to determine if incentives provided to beneficiaries at the point of sale will increase the purchase of fruits, vegetables and other healthful foods among SNAP participants. This pilot program addresses some of the following questions in a roundtable where these questions were brought up. The following is directly from the transcript from these roundtable questions about the HIP program (USDA FNS 2008):

- 1. What are the pro/cons of providing incentives for the purchase of all fruits and vegetables versus some subset of them, e.g., fresh fruits and vegetables? If the pilot rewards the purchase of all fruits and vegetables, are there easy-to-apply rules of thumb for distinguishing between marginal products, such as veggie chips and frozen fruit bars?*
- 3. How important is it to add additional forms of fruit and vegetable promotion or education to the financial incentive? Are there any promotions that reach a large number of people and are compatible with point-of-purchase incentives that you know to be effective?*
- 5. What level or levels of financial incentive are likely to lead to measurable change in foods purchased? How would timing of delivery of incentives influence usage (i.e., incentive provided at time of purchase versus incentive earned for future use)?*
- 6. What steps need to be taken to ensure that SNAP recipients know about the pilot? What are the potential barriers to pilot participation for SNAP recipients? How can these challenges be eliminated or minimized?*

7. FNS is interested in measuring whether or not incentives increase household fruit and vegetable purchases or substitute for current purchases. That is, do SNAP households simply shift purchase habits – e.g., purchase fruits and vegetables with SNAP benefits and use their cash resources to buy other, possibly less healthful, foods? What data are available from stores (i.e., aggregate sales, individual purchase transactions) to answer this question? Will it be necessary to collect information directly from households to get the complete picture?

8. What do we know about the relationship between fruit and vegetable purchases and fruit and vegetable consumption? Is it reasonable to assume that increased purchases will result in additional consumption? If not, are there lower cost options for measuring household food consumption than the traditional food diaries or 24 hour recalls?

9. Farm Bill legislation specifies a rigorous evaluation design – preferably one where households or communities are randomly assigned to incentive and non-incentive conditions. What factors need to be considered when choosing between random assignment of households within a community versus random assignment of similar communities?

11. What are the implications of choosing between an incentive that assumes the form of a discount available pre-purchase, a discount upon purchase of fruits or vegetables, or a post-purchase bonus?

12. While most SNAP benefits are redeemed through retailers with sophisticated information systems, many authorized stores do not have such capacity. Under what circumstances would it be possible to include the full range of store types in any locale?

13. EBT eliminated the need to process paper benefits. What are the key challenges associated with delivering an electronic incentive that is integrated with current state systems? What lessons have you learned about resolving such challenges? What is the minimum amount of time required to make the necessary system changes, test the process, and implement it? What are the cost implications?

14. Are there options outside the EBT system worth considering? What might they be? For example, would relying on a separate debit card offer any advantages? What would be the downsides or additional challenges with any other approach?

15. What are the threats to SNAP integrity that need to be addressed if the financial incentive pilot is integrated into EBT systems? How can these be reduced or eliminated? Do they suggest the need for new reporting requirements?

16. How can the incentive funding be clearly identified at the recipient, retailer and banking system level so that costs and benefits are clearly identified for key stakeholders?

As of 2012 the answers to most of these questions are being answered in small tests. Observations will help SNAP make decisions about how to properly offer incentives. One suggested proposition is the use of targeted foods to promote the sale and purchase of fruits and vegetables. There are two methods of delivering this system using EBT cards. The first is to have one EBT that puts money back when fresh fruits and vegetables are purchased. Therefore one account would benefit from the purchase of incentive foods. This money put back could theoretically be used to buy foods that are not healthy foods thus making this process susceptible to slight misuse. The second method would be to have two different EBT cards, one for the incentive items and one for all other items. When purchasing food the money returned for buying incentive foods could only be used to purchase more incentive foods. This would then help preserve the integrity of the system.

Propositions to Effectively Deal with Obesity

"Nature is the true revelation of the Deity to man. The nearest green field is the inspired page from which you may read all that it is needful for you to know." This quote from *The Stark Munro Letters* by Sir Arthur Conan Doyle in relation to food and diet suggest that maybe nature is the answer to food. For too many years processed foods have been allowed to dominate the market and perhaps there needs to be a return to nature. The simplest way to curb obesity is to change people's eating habits. One way to do this is to increase the price of food. Changing relative prices of selected foods through taxing or subsidies affects dietary quality. (Andreyeva et al 2010) Young people in lower income brackets are more susceptible to obesity because the cheapest foods are usually the most calorically dense and not nutritious. Much like the tobacco industry, the food industry could benefit from the effectiveness of raising prices. A drastic change in the taxation of unhealthy food products would have a much better effect than a small price hike and this must be taken into effect when dealing with pricing. Severe taxation would be a means of obtaining funds to combat the adverse effects of obesity or prevention of obesity. Assuming no substitution of soft drinks with other caloric beverages and no change in other factors affecting purchasing behavior, our estimates of the price elasticity of soft drinks suggest that a 10% tax on soft drinks could lead to an 8% to 10% reduction in purchases of these beverages (Andreyeva et al 2010). The USDA estimates that a 10 percent price increase on salty snacks would result in reductions of 1 lb a year in body fat and an increase in tax revenue of 1 billion dollars. (Kuchler, Tegene & Harris 2004)

The relative price of fruits and vegetables has been higher than normal consumer products since the early 1980's. The relative price of sweets and carbonated drinks has not changed as drastically as fruits and vegetables. This suggests that in order to keep profits high food companies would rather charge less in order to ensure that people choose their products. Some argue that because food is necessary for survival that no one food should be singled out like in the soft drink tax. However it is important to note that soft drinks are most certainly not required for human survival and that they are partly the reason why Americans consume up to

300 more calories than they did a few decades ago. Soft drinks on average count for at least 200 of those calories (Brownell & Frieden 2009)

“To change social attitudes and challenge social norms, governments must implement radical policy changes that enforce an environment in which food production, marketing, and consumption are controlled”(Davey 2004). When asked whether they support a soda tax 52% of New Yorkers supported it. When told that the funds would be directed towards obesity prevention then 72% of people supported it.(Brownell & Frieden 2009). The government has to work in conjunction with the people in order to make a consolidated effort to beat obesity.

In the case of school lunches, state governments have the right to impose restrictions on the sale of all foods and beverages sold at schools who participate in the federal school meal program. Some states have mandated a higher quality of nutrition for foods sold outside the meal program. Other states have limited the hours where the sale of these foods can occur (Story et al 2009). The rising costs of foods have limited the quality of food that schools are able to deliver to their students. Schools have to place the calorically dense low nutrition foods in the same menu as the government’s nutritionally adequate foods in an effort to generate revenue and keep the students satisfied. The USDA announced in 2012 the Healthy Hunger Free Kids Act (USDA announces steps) which suggests for the first time that hungry kids should not be subjected to unhealthy foods simply because they cannot afford it. In this act includes:

The demonstration projects are just one of the major components of the Healthy Hunger Free Kids Act from the Food and Nutrition Service of the USDA, now implemented or under development, that will work together to reform school nutrition. In addition to the updated meal standards, unprecedented improvements to come includes:

- *The ability to take nutrition standards beyond the lunch line for the first time ever, foods and beverages sold in vending machines and other venues on school campuses will also contribute to a healthy diet;*
- *Increased funding for schools – an additional 6 cents a meal is the first real increase in 30 years – tied to strong performance in serving improved meals;*
- *Common-sense pricing standards for schools to ensure that revenues from non-Federal sources keep pace with the Federal commitment to healthy school meals and properly align with costs; and*
- *Training and technical assistance to help schools achieve and monitor compliance.*

Parent participation is also a major component to childhood obesity. Children generally have little power over the foods that their parents buy, however a combination of persuasive children, advertising, and pricing are able to influence their parents into buying foods that are detrimental to their children’s health. In order to learn more about what is fueling childhood

obesity it is essential to work with parents in the research process (Jurkowski et al, 2012). A case study done in Canada showed that a large portion of children aged 2-18 consumed sweetened beverages daily. While sweetened beverages are not the only factor in obesity there are generally attacked first because of their low nutritional value. Every day consumption may put children at risk for eventually being overweight and obese (Danyliw et al, 2012).

One market where people tend to be malnourished is in the food stamp department. Generally food stamps are used to buy processed, longer shelf life foods. Buying processed foods allows for cheaper food costs as well as increased quantities of food. In this way it makes sense to buy what is more available rather than focusing on how healthy it is because of pure economics. In an FDA report about food restrictions they ask the question "Are "healthy" foods characterized by the absence of nutrients to be avoided, the presence of desirable nutrients, or a combination of both? ("Implications of restricting," 2007)." The logistics of implementing such a system where the foods that people purchased using tax dollars were monitored would be very expensive for the government and for store owners so it could create more of a stigma associated with food assistance. Imagine being at a supermarket and being denied foods at the checkout because they were too unhealthy. Situations like this would be met with great opposition.

"Coming together is a beginning. Keeping together is progress. Working together is success." -Henry Ford

The international community, specifically the International Association for the Study of Obesity in conjunction with the European Association for the study of Obesity has proposed many ideas in order to curb the increasing obesity in the European Union and International community. " Identifying the causes of this decline in activity does not necessarily then provide the basis for reversing the progressive levels of inactivity, because the advanced automation of the workplace and the home, together with the computerization of so many societal activities, cannot be reversed. Therefore novel approaches to enhancing physical activity have to be developed now that few groups in the population are to be required to be very physically active in order to earn their living"("Joint response of," 2006). Actively searching for a modern solution to curbing obesity is much more practical than simply looking to point a finger. The first course of action would involve putting monitoring systems in place for children and adults. The following steps are taken from the joint EASO study in 2006:

a) Monitor Birth weights

The more overweight when they are pregnant the more they are susceptible to becoming diabetic during pregnancy and having bigger babies which in turn will create children who have a bigger chance of being obese. Women have a tendency to eat erratically during their pregnancy which in turn leads to weight gain which many women are not able to get rid of after the pregnancy. Consecutive pregnancies additionally add more poundage and less of a chance that the mother will return to a normal weight.

b) Monitoring breast feeding rates and determinants of poor compliance

The WHO has suggested that the optimal growth patterns occurred during the first five years of their life. Children on formula and other artificial foods do not get the benefits of breast feeding as demonstrated by some Scandinavian countries. As many parents do not know what is perfect for their child it is up to governments to provide research and qualitative data to show parents exactly what is right for their newborns and young children.

c) Monitoring children

As most children have to go school this provides a method for the collection of BMI data for the children. This will allow the government to monitor the progression of policies as well as see areas that are having difficulties with overweight and obese children. Parents of children who are having problems with their weight can be given directives to lose weight such as diets or exercise regimens. This method would allow parents and institutions to help stop obesity at a very critical points in the lives of their inhabitants.

d) Monitoring Adults

The use of National Surveys on adults would be able to determine BMI data as well as waist circumference and health issues such as cholesterol, blood pressure, and diabetes.

e) Monitoring Disease Patterns

The observation of diseases related to obesity in order to qualify exactly what are the biggest burdens of obesity. This data will also serve as an signal to the public as to the detrimental aspects of obesity.

f) Monitoring Special Groups

The observation of special populations that are more susceptible to diabetes and the creation of separate directives to help combat with this. For example Asian populations are more susceptible to diabetes as compared to Europeans who experience the same changes in weight.

After collecting data from systems (a-f) a governmental agency would be responsible for populating the data in a timely fashion and in a consistent matter, annually or biannually. Subsequently a plan to promote the development of national health institutes capable of appropriate reactions to increasing waistlines and increasingly unhealthy eating habits. One proposed measure includes the creation of color schemes for nutrition labels("Joint response of," 2006):

The recent UK Food Standards Agency (FSA) scheme for simplified front of pack nutrition labeling (traffic lights) will:

- provide separate information on fat, saturated fat, sugar and salt*
- use red, amber or green color coding to indicate whether levels of these nutrients are high, medium or low*
- use nutritional criteria developed by the FSA to determine the color code*
- give information on the levels of nutrients per portion of product.*

The process of using color coding to labels foods stems from the fact that people are more visually responsive than responsive to words. Therefore a red color on high fat food might then lead to people associating red with bad and start to make better choices. Similarly a green label might induce the purchase of healthier foods thus leading to healthier lifestyles. Consumer education in a sense is the easiest but most challenging way to tackle this problem and fixes like this make it more possible to educate the consumer. When it comes to obesity the global climate has changed. There is a concentrated effort in most places to combat this problem because it is almost completely reversible. Obesity is not death sentence.

Conclusions

There is an old saying: every cloud has a silver lining, which means that through negative things you can find something positive. Mary Kay Ash the founder of Mary Kay cosmetics reversed this saying "Every silver lining has a cloud." This signifies that even the positives sometimes do not change the fact that there are many underlying issues. How much can the food environment change in America without affecting millions of jobs. Hypothetically if McDonalds and other fast-food chains were to be taxed heavily for providing calorically dense foods then prices would go up and people would be laid off due to decreased revenue. More people would be thrown into the welfare system at the point which would create stress on the economy and the US government. The scope of obesity extends into many realms of life. The reasons behind obesity are clear. People have lost track of the concept of energy balance. In *Coriolanus* William Shakespeare writes "What is the city but the people?" If the people of the world cannot stand up for their own health then the world will suffer as collective. There are many factors which are contributing to the lack of energy balance including the consumption of energy as well as the expenditure of that energy. On one hand the people are to blame because they cannot control their addiction, but on the other hand the psychological effects of food cannot be overlooked. All socioeconomic statuses, the entire city, are affected by obesity and it does not discriminate with race or gender. Those with less money are more likely to be obese for the simple fact that pizza is cheaper than a salad. With the large portion of meals being purchased rather than home cooked it seems that healthy food is more expensive than junk food. However when closely examined it can be discovered that

fresh home cooked food is not as expensive as one would think. Farmers markets and street vendors provide less costly alternative to supermarket prices.

With the concept of reduced need for physical activity also comes the concept of reduced need for high energy containing foods("Joint response of" 2006). In the past, the fear of malnutrition and under nutrition led to the development of foods that were incredibly dense.. However these foods have become too successful and have shaped societies that are consumed with consumption.

As the affordable healthcare act settles into its implementation it is important to discuss personal responsibility. In order to curb healthcare costs, those who are obese should be required to give a larger portion of their paycheck towards healthcare premiums until they show that they want to improve in which case their premiums should be returned to normal. By creating and sustaining a connection between health and personal responsibility all the financial as well as social issues associated with obesity can be accounted for and dealt with accordingly.

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