WHY OBESITY?

In 2014 North Dakota was rated the 9th most obese state in the nation, with 32.2% of the adult population classified as obese, up from just 11.6% in 1990 (Trust, 2015). At this rate, by 2030 an estimated 57.1% of North Dakotans will be obese and will experience increases in chronic conditions such as diabetes, cardiovascular disease, hypertension and arthritis (Trust, 2012). A viable way to address this health crisis is to improve nutritional habits through an innovative, educational program that centers on community-based wellness centers. The proposed program will increase food security, health literacy, screenings for comorbid conditions, and facilitate social interactions and support networks—all of which will ultimately reduce North Dakota’s obesity rate.

WHAT CAN BE DONE?

The initiative Grow North Dakota aims to create comprehensive community wellness centers that combine communal gardens and kitchens with a space for “cultivating community wellness one community center at a time” with physical activity and learning opportunities to improve access to health and wellness resources for those in rural and underserved areas of North Dakota. Pre-existing community centers willing to provide space for this new initiative would be identified in a statewide list serve.

North Dakota has one of the highest concentrations of places of worship (more churches per capita than any other state), providing well-suited spaces for initial implementation of initiative location sites. Schools, recreational centers, and other publicly owned spaces would also be considered. Moreover, the wellness centers will be eligible to receive subsidies and certain monetary incentives from their earnings.

These Grow North Dakota centers will also present ideal venues for outpatient health and obesity education. By facilitating access to healthcare providers, especially nurse practitioners, these wellness centers will allow North Dakotans better access to culturally competent care that will be individualized based on the needs of each unique community.

Lastly, this policy will require a strong network of federal, state, and local coalitions to provide resources and tools to pre-established community networks. In order to be successful, it will be necessary to work closely with and support community leaders since such persons can best advocate for members of their communities as they are already trusted and respected.

WHAT CAN YOU DO?

The best way for policymakers to influence and promote this policy is by applying for funding from the Community Facilities Direct Loan & Grant Program via the United States Department of Agriculture and Rural Development (USDA). This program provides funding for improving or constructing community facilities in rural areas that will provide “essential services” to the local community (United States Department of Agriculture, 2015). In order to garner support for the proposed policy, it will be important to highlight that obesity-related medical conditions cost $147 billion per year in the United States alone (Finkelstein, 2009).

As North Dakotans become active participants in their own health, they will begin to help shape future policy and legislation based on the unique needs of their communities. The momentum for health behavior change must start at the individual and community level; this will translate into improved health outcomes statewide and will have a lasting impact on North Dakota’s most marginalized populations.
NORTH DAKOTA STATE CONTEXT

In 2014, North Dakota’s population was approximately 739,482 people, a 9.9% increase since the 2010 U.S. Census; a growth rate three times the overall U.S. population. North Dakota has nearly five times the population of American Indian/Alaska Native (5.4%) compared to the remainder of the US (1.2%). When obesity rates are stratified by race, it becomes apparent that North Dakota’s American Indian population represents an important target group for obesity prevention since rates are historically highest in this group (36.1% of North Dakotan American Indians are obese, compared to 31.2% of Whites) (United Health Foundation, 2015).

North Dakota is also one of the few remaining states organized around a system of hyper-local governance, as it has the nation’s highest rate of governments per capita, about 39 per 10,000 residents (Maciag, 2012). North Dakotans report a strong sense of identity and ties to their local communities due to these interactive “true citizen government[s]” (Maciag, 2012).

In the past decade, North Dakota has become a leading producer of crude oil in the U.S., second only to Texas (U.S. Energy, 2015). This “oil boom” boosted the state economy and induced a tremendous influx of new residents. In oil-rich pockets of North Dakota, fast food chains predominate because they pay crew-level employees double the minimum wage (Little, 2014). The oil-driven population expansion also overwhelmed existing medical facilities and produced a severe shortage of providers statewide (Eligon, 2013).

There is a geographical disparity in access to healthcare: 65% of North Dakota’s primary care providers practice in urban centers where only half of the population lives, while only 10% of primary care providers practice in the most isolated rural areas of the state where 23% of the population lives (Center for Rural Health, 2015). Given this discrepancy between the availability of health care providers and rising health concerns, the government leadership of North Dakota has taken initial steps toward prioritizing obesity prevention (Eligon, 2013). Governor Jack Dalrymple recently expanded Medicaid, allotted a significant amount of the 2015-2017 executive budget to expand UND Medical School, and dedicated $80.4 million to the state park system to augment outdoor recreational opportunities (Dalrymple, 2014).

Although North Dakota has the lowest prevalence rates of food-insecure households...


Figure 2: North Dakota counties that have both low income and food desert (in green). Source: USDA Economic Research Service, Food Access Research Atlas, 2013.
in the country as seen in Figure 2 (8.4% low food security, 2.9% very low food security; USDA ERS, 2014), the Department of Human Services SNAP budget only subsidizes food benefits for 27,200 households across the state (“Supplemental Nutrition,” n.d.). This fails to adequately cover the one in twelve North Dakotans who seek emergency food assistance annually (“Creating a Hunger Free,” n.d.). Additionally, there is an inverse relationship between obesity rates and income levels in North Dakota: 40.6% of residents earning less than $40,000 annually are obese, compared to just 29.4% of those earning more than $75,000 (United Health Foundation, 2015). Food insecurity, poverty, and hunger are important issues in the prevention of obesity-related chronic disease.

A 2013 prevention status report from the CDC showed that the state’s biggest health concern was obesity. North Dakota has the ninth highest adult obesity rate in the U.S., and the eleventh highest rate of obesity in high school age children (13.5%) (Trust, 2015). In a recent review of dietary behaviors and physical activity level of North Dakotans, the CDC reported several concerning statistics (CDC, 2015):

- 40.3% of adults consumed fruit less than once per day
- 27.4% of adults had less than one serving of vegetables per day
- Nearly 75% of adolescents surveyed drank soda during the previous week
- More than 30% of adolescents consumed less than one serving of fruit or vegetables per day
- 27.6% of adults had not been physically active at all during the entire previous month
- 75.3% of adolescents failed to meet national physical activity standards recommending sixty minutes of activity on all seven days of the week.

All of these factors contribute to North Dakota’s alarming obesity rates. There is an urgent need for innovative methods of obesity screening and education, and preventive healthcare services in remote rural areas. Greater resources must be allocated to communities to help engage residents in active and healthy everyday practices.

**NATURE OF THE PROBLEM**

Obesity is at the forefront of health problems in the US and particularly in North Dakota. In 2014, 63.6% of North Dakota residents were overweight, and 32.2% were obese. If this is not addressed, it is projected that by 2030 the obesity rate will rise to 57.1% (Trust, 2012). Increasing obesity rates, will also lead to an increase in comorbidities such as diabetes, hypertension, and cardiovascular disease (Figure 3).

The costs of obesity are widely recognized and include direct medical costs, indirect medical costs, and nonmedical costs. In the US, 75% of healthcare spending is currently used for the treatment of chronic illness and expenditure due to obesity is estimated to be as much as $210 billion annually, or 21% of total national healthcare cost (Ehrens, 2014). When accounting for
nonmedical costs of obesity, the overall annual cost is estimated to be $450 billion (Ehrens, 2014). A new study that takes into account the two-way relationship between obesity and chronic disease estimates that per capita medical spending was $2,741 higher for obese individuals than for individuals who were not obese, a 150% increase (Cawley and Meyerhoefer, 2012).

Over the next 20 years, obesity could contribute to 79,617 cases of type-2 diabetes, 190,379 cases of coronary heart disease and stroke, 170,470 cases of hypertension, 110,099 cases of arthritis, and 26,762 cases of obesity-related cancer in North Dakota alone (Ehrens, 2014).

PROPOSED SOLUTION

Grow North Dakota will focus on preventative healthcare and obesity prevention measures which will aim to reduce the obesity crisis in North Dakota. Programs such as these have the potential to improve eating habits, increase health literacy, and improve overall community wellbeing while reducing overall obesity rates. A recent study in rural Mississippi demonstrated that the combination of improving access to fruits and vegetables and nutrition education significantly decreased BMI and enhanced consumption of high quality foods of the participants within 6 months (Barnidge et al., 2015).

Creating Grow North Dakota community centers throughout North Dakota allows for an opportunity to improve access to health and wellness resources, especially for those living in desolate rural areas lacking transportation. Community leaders will recruit their neighbors to join and engage in a variety of health activities including:

- Educational programs for school-age children
- Diabetes and hypertension screening
- Partnering with a local clinic or healthcare provider
- Partnering with existing initiatives such as MediQHome, Breath ND Smoke-Free Law, Healthy North Dakota, and Healthy Weight for Life
- Developing a community garden
- Providing fitness groups and classes
- Establishing a program for senior citizens

Not only will the community centers serve as a platform to share information on obesity and chronic disease management, they will also foster a sense of belonging and camaraderie.

Educating providers about using community centers for outpatient health and obesity education will facilitate this transition of care from the office setting into the community. Providers should be encouraged to participate in these community events to model and lead their teachings. In addition to preventing obesity through lifestyle and diet management, providers would also be educated on how to best manage and reverse this disease.
North Dakota is in a particularly advantageous position to promote policies that address the myriad needs of residents because of their system of township-based local governance. With nearly 1400 townships in the state, the local government is extremely accessible to the residents. The most effective method to ensure the success of this policy will be to give communities the necessary resources to address their needs.

The goal of the policymakers will be to provide the framework that will allow each individual community to address the nuanced needs of its population. The USDA offers a Community Facilities Direct Loan & Grant Program for eligible rural areas that are seeking to improve or construct community facilities. Qualified facilities include: healthcare facilities, educational service facilities as well as community gardens, pantries and greenhouses (USDA, 2015). In order to pass the proposed policy, it will be necessary for the ND public bodies of interest to obtain the funding from the USDA and implement a Grow North Dakota community center that will serve as a “proof of concept” for the rest of the state. Addressing the obesity epidemic in rural ND will free up funds both for this program and for other sectors (Finkelstein 2009; Ehrens, 2014).

PROJECTED OUTCOMES

Obesity rates in North Dakota continue to climb 1% each year although this is better than the 2-3% increase in obesity rates that occurred between 1995 and 2003 and the 2% increase between 2011 and 2012 according to figure 2 (ND, 2014). The projected results for this policy will include stagnation in the obesity rate within 6 years and a 10% increase in people accessing resources related to reducing obesity and maintaining a healthy lifestyle. The proposed policy will proactively target underserved populations, families, and Native Americans in order to lower the obesity rates. It will also succeed in educating healthcare professionals on how to help their patients maintain a healthy weight and adopting healthier lifestyles and while having a cost-savings approach to healthcare management, saving the government money.

The Women, Infants and Children Program (WIC) will have a partnership with the Grow North Dakota and expand upon WIC’s mission to provide nutritious foods and education to income-qualifying women who are pregnant or breastfeeding, and children five years and under (CDC, 2013). Such partnerships will be established throughout the state to provide locally grown foods. Currently, 17 counties in North Dakota are potential food deserts, meaning that within these areas there is poor access to high quality, healthy foods (Healthy North Dakota, 2005). By taking advantage of the ability to change zoning laws within these counties, healthier food establishments such as Grow North Dakota, will increase access to more nutritious foods. The Grow North Dakota will provide access to fresh organic produce, engage families in physical activity and serve as an educational stepping-stone for home gardening and nutrition education.

This initiative also aims to aid Native Americans residing on North Dakota reservations, who present disproportionate health disparities in the state. In fact, 25.4% of Native Americans on North Dakota reservations present with obesity, 34% are afflicted with high cholesterol, 78.4% report not eating 5 vegetables/fruit per day, and 10.2% report “poor” health (US Census, 2013). While there are organizations and

Figure 5: Social Determinants of Health versus US healthcare spending (2012). Retrieved from: http://bipartisanpolicy.org/projects/lot-the-lose
institutions at the local and state level, Native Americans have access to additional resources through the federal government: the Indian Health Service (IHS) (USDHHS, ND, 2014). Through Grow North Dakota, this population will be aided, projecting an obesity stagnation rate of 25.4%, and a decrease by 2021.

Another projected result regards the education of healthcare professionals. Important components of every medical visit should include screenings for obesity and its risk factors such as assessing BMI, diet, exercise and sedentary activities. Simultaneously providers should educate patients on obesity lifestyle risks and modifications (Findholt, Davis, & Michael 2013). Providers will be aware of and utilize available resources for addressing obesity in the community setting. An example tool, the “Healthy Care for Healthy Kids: Obesity Toolkit,” was developed by the National Institute for Children’s Health Quality to address childhood obesity and provides resources for both the provider and family (Healthy Care. 2014).

Another tool developed by Hopkins, Decristofaro, & Elliott (2011), utilizes a stepwise approach to screening, education, and management of childhood obesity, a useful resource in primary care settings. Additionally, providers will be trained in motivational interviewing and other techniques that can be utilized in community settings to facilitate more effective methods of communication with patients on obesity and lifestyle choices. Motivational interviewing, as a method of communication, has proven to be an effective intervention in reducing BMI percentiles in children (Rensicow, 2015).

Grow North Dakota and the proposed policy projections will have many positive outcomes on the health of North Dakota, the competency of healthcare providers in caring for obese patients, and will aim to lower healthcare costs. If the North Dakotan public could lower their BMI by an average of 5%, North Dakota could save 7.2% in healthcare costs, equating to savings of over one billion dollars ($1,177,000,000) by 2030 (Ehrens, 2014). Programs like the proposed policy have been “associated with enhanced food skills, improved community food security, and improved community wellbeing” (County Health Rankings & Roadmaps, 2012).

The overall purpose or goal of encouraging healthy eating is to allow North Dakotans to make long-term lifestyle changes within their homes and communities. Overall, the expected outcome of the Grow North Dakota health policy initiative is improved access to educational resources, tools to maintain health while reducing the high rates of obesity among the population. Financially, the initial investment will end up saving the state and federal government money, by reducing the risks chronic comorbidities like diabetes, cardiovascular disease, and cancer.

**STRATEGIES FOR IMPLEMENTATION & EVALUATION**

Once a rural public site of interest in ND receives the funding from the USDA and implements a Grow North Dakota community center that proves to be both efficient and effective at reducing obesity in the community, other eligible sites will have the appropriate evidence to apply for further funding at the local, state or federal levels. After the establishment of a larger source of funding, whether it is a grant or direct loan, the primary incentive statewide will be a subsidy to each township’s Grow North Dakota community center. This subsidy will be contingent upon the inclusion of a minimum of three of the seven components previously proposed (educational programs for children, screening for obesity comorbidities, partnering with a clinic or healthcare provider, partnering with existing state initiatives, developing a community garden, providing fitness groups and classes, and providing classes for seniors) and the participation of at least 30% of the township’s population.

For each additional percent of the population served and each additional
component included in Grow North Dakota community centers, each center will be eligible for additional funding. This will enable the townships and centers to continue to comply with the policy, as well as encourage expansion and growth over the years. By tackling the problem of obesity at the roots of nutrition, this policy can benefit every kind of person throughout the many areas of the state’s structure. Moreover, each citizen will have a hand in the progress of decreasing obesity by participating in his or her township’s Grow North Dakota center.

To further fortify this policy, it will be necessary to foster local and state coalitions and networks in order to create a sense of empowerment for citizens. This will allow them to voice ideas that can later influence policy and legislation, therefore making a direct impact on their cities and towns.

Currently there is little to no collaboration between these distinct projects and organizations, but our policy has the potential to rally all those already working towards healthier citizens, with the incentives to keep the movement going. Efforts such as MediQHome, Breath ND Smoke-Free Law, Healthy North Dakota, and Healthy Weight for Life can be streamlined under the umbrella of the community centers to increase access and outcomes.

In order to evaluate this policy, the following criteria will be used to monitor its progress, and to gather quality data to assess whether the outcomes meet our standards of efficiency and effectiveness. With respect to healthcare providers associated with the community wellness centers, additional endpoints will be monitored in order to track policy progress.

**CONCLUSION**

Focusing on obesity prevention at the local level can create a sense of empowerment for citizens, allowing them to actively participate in their health management and voice ideas that can later influence policy and legislation; therefore, residents can make a direct impact on their respective towns and cities. The impact of this preventative

---

1. The number and location of community wellness centers founded (churches, community centers, schools, etc.)

2. The percentage of centers partnering with clinics or healthcare providers (including obesity nurse specialists, case managers and dieticians, etc.)

3. Participation in each of the included components in order to track success and areas for improvement.

4. BMI trends of the wellness center participants versus residents who do not participate and receive the traditional standard of care for obesity management.

5. Weight trends of obese children who participate in these programs (tracked via school and primary care provider documentation).
intervention will transcend the realm of healthcare to improve important economic factors: North Dakota’s workforce and productivity will expand due to fewer work sick days, and there will be a drastic cut in health care spending without the expensive management required for these diseases. Changing organizational practices will become tools that citizens can take and continue to pass along for future North Dakotans.

In order for this policy to be implemented successfully with the goal of reducing and preventing obesity and its comorbidities, various factors and players need to be in cooperation. At a micro level, strengthening individual knowledge and skills while promoting community involvement will set a foundation that can transcend to a macro level to have a statewide effect.

Educated providers and obesity nurse specialists will be the crucial link between science and the public, since they will be able to share continually evolving evidence-based practices in nutrition, physical activity, and other measures of healthy living. This will ensure that the proposed community wellness centers will have the most efficient and effective results for the investment.

By allowing each township to personalize a community center that meets its unique needs, community wellness centers will prove to be a powerful tool to empower North Dakota residents and decrease rates of obesity along with its comorbidities.

REFERENCES


