

St. Mary's Supper Club:

A Diabetes Education Program for Older Adults with Type 2 Diabetes

HPRB 4400 Program Planning

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## Mission Statement

In partnering with the St. Mary's Health Care System St. Mary's Hospital outpatient diabetes education program and local restaurant 5 Bar, St. Mary's Supper Club addresses poor diabetes management through nutrition education for older adults ages 65-74 with type 2 diabetes in the Athens-Clarke County (ACC) area. The St. Mary's Supper Club increases self-efficacy and skills needed for older adults ages 65-74 with type 2 diabetes to plan and prepare a healthy diabetic friendly meal at home while on a budget.

**Goal 1.** St. Mary's Supper Club attendees will report increased adherence to the United States Department of Agriculture (USDA) 2015-2020 Dietary Guidelines (United States Department of Health and Human Services and United States Department of Agriculture, 2015) by the end of the two-year program.

- **Objective 1.** St. Mary's Supper Club attendees will keep food diaries of what they cook and eat at home and will show their food diaries to the diabetes educator every six months (Tuesday, March 5th, 2019, Tuesday, August 6th, 2019, Tuesday, March 3rd, 2020, and Tuesday, August 4th, 2020), for a total of four checkpoints throughout the program to ensure attendees are understanding how to apply class concepts at home.
- **Objective 2.** By the second food diary check (Tuesday, August 6th, 2019) with the diabetes educator, 20% of class attendees will report a statistically significant ( $p$ -value  $\leq 0.05$ ) increase in consumption of fruits and vegetables and a statistically significant decrease ( $p$ -value  $\leq 0.05$ ) in consumption of added sugars and saturated fats through their food diaries.
- **Objective 3.** By the last food diary check (Tuesday, August 4th, 2020), 40% of St. Mary's Supper Club attendees will report a statistically significant ( $p$ -value  $\leq 0.05$ ) increase in consumption of fruits and vegetables and a statistically significant decrease ( $p$ -value  $\leq 0.05$ ) in consumption of added sugars and saturated fats through their food diaries.

**Goal 2.** St. Mary's Supper Club attendees will have the ability to demonstrate and apply their new nutritional knowledge and self-efficacy of their cooking skills in their own lives by the end of the program.

- **Objective 1.** St. Mary's Supper Club attendees will take a brief 10 question pre-test assessing their current knowledge regarding how to plan, purchase, and prepare a healthy diabetic friendly meal at the beginning of the class (Tuesday, August 7th, 2018) and a post-test that reassesses these same concepts at the end of the class (Tuesday, August 4th, 2020) when attendees will have learned more information.
- **Objective 2.** St. Mary's Supper Club attendees will demonstrate the skills they have learned in their class in a cook-off on the last day of the program (Tuesday, August 4th, 2020) for a \$10 Visa gift card.
  - Ingredients will be provided by 5 Bar and class attendees will plan and prepare one of the meals demonstrated in class on their own in the St. Mary's Hospital cafeteria kitchen. Class attendees will be divided into two teams and each team will have to show the ingredient list for the recipe they chose and approximately

how much each item would cost in the store. The diabetes educator will observe if each team properly plans a healthy meal within a budget of \$40. The diabetes educator will observe if each team member properly measures out each ingredient, uses proper cutting and slicing techniques, and adheres to appropriate USDA 2015-2020 Dietary Guideline (United States Department of Health and Human Services and United States Department of Agriculture, 2015) portion sizes. The team that correctly plans and prepares the chosen meal within the budget will win a \$10 Visa gift card for each team member.

**Goal 3.** St. Mary's Supper Club attendees will have improved blood glucose levels, cholesterol levels, and hemoglobin A1C test results by the end of the program.

- **Objective 1.** Blood panels including blood glucose levels, total cholesterol, LDL cholesterol, and HDL cholesterol, and a hemoglobin A1C test will be taken by a phlebotomist from program participants on the first day of the program (Tuesday, August 7th, 2018) and on the last day of the program (Tuesday, August 4th, 2020). Results will be delivered to the health education specialist for recording and to examine and compare trends in the aforementioned biomarkers from the beginning and end of the program.
  - It is expected that at least 25% of participants will have statistically significant ( $p$ -value  $\leq 0.05$ ) improvements in their hemoglobin A1C levels, blood glucose levels, total cholesterol, LDL cholesterol, and HDL cholesterol by the end of the two-year program.
- **Objective 2.** Class attendees will receive copies of their blood panels to show the before and after effects of participating in St. Mary's Supper Club.

## **Needs Assessment Purpose and Scope**

The goal of this needs assessment is to better direct health promotion program planning efforts in assisting Athens-Clarke County older adults between the ages of 65 and 74 with type 2 diabetes in better management of their health. Existing community support programs for diabetes management will be assessed and identified as well as risk factors for complications in older adults with type 2 diabetes. Lastly, a new nutritional education intervention program called St. Mary's Supper Club will be proposed to better assist older adults aged 65 to 74 in their diabetes care management and older adults' promote self-efficacy in managing their diabetes. This new program will address the gap in diabetes nutrition education for older adults aged 65 to 74 living in the Athens-Clarke County community.

## **The Problem of Type 2 Diabetes in Older Adults**

Diabetes is a chronic lifelong disease that affects a person's energy transformation process (Centers for Disease Control and Prevention, 2017a). Food is transformed into energy by being broken down into glucose by the human body, and insulin is the key that allows the glucose to enter the cells in a person's body (Centers for Disease Control and Prevention, 2017a). Diabetes is either caused by the pancreas not making enough insulin (type 1) or a person's body does not respond to the insulin as it should (type 2) (Centers for Disease Control and Prevention, 2017a). The glucose then builds up in the blood-stream when it cannot access the cells and can lead to severe health problems such as heart disease, vision loss, and kidney disease (Centers for Disease Control and Prevention, 2017a). Diabetes is typically diagnosed using a fasting plasma glucose test or a hemoglobin A1C (National Institute of Diabetes and Digestive and Kidney Diseases, 2014). Both of these tests are performed after taking a blood sample. The plasma fasting glucose test measures the amount of glucose in a person's body at that one point in time. The hemoglobin A1C test is an average of the glucose in a person's body from the past three months. A fasting blood glucose level over 126 and a hemoglobin A1C over 6.5 signifies that a person has diabetes (National Institute of Diabetes and Digestive and Kidney Diseases, 2014).

An estimated total of 30.3 million Americans of all ages had a diabetes diagnosis in 2015 (Centers for Disease Control and Prevention, 2017c). This is approximately 9.4% of the entire United States (U.S.) population. Within this estimation were 30.2 million adults over the age of 18 of which 7.2 million were unaware that they had diabetes (Centers for Disease Control and Prevention, 2017c). Type 2 diabetes is the most common form of diabetes and nine out of ten people diagnosed with diabetes are type 2 (American Diabetes Association, 2017a; Centers for Disease Control and Prevention, 2017a). When a person has type 2 diabetes their body does not use insulin correctly, leading to high levels of glucose in the bloodstream (American Diabetes Association, 2017a). At first, the pancreas secretes more insulin to counter the excess glucose, but it is not able to continuously secrete extra insulin to keep the blood glucose levels in a normal range (American Diabetes Association, 2017a). Uncontrolled diabetes has significant risk factors including the above-mentioned complications as well as foot and nerve problems (American Diabetes Association, 2017b). Uncontrolled diabetes is a major health concern for older adults. For American older adults ages 65 and older, the total prevalence of diabetes (type 1 and type 2

combined) has increased to a high of 25.2% or 12 million seniors (diagnosed and undiagnosed) (American Diabetes Association, 2017c; Centers for Disease Control and Prevention, 2017c). The 2015 crude incidence rate for the number of American adults 65 and older with diabetes (type 1 or type 2) per 1000 people was 9.4 (Centers for Disease Control and Prevention, 2017c). With 90-95% of all diabetes cases being type 2 diabetes, a program is needed to help older adults ages 65 and older better manage their type 2 diabetes (Centers for Disease Control and Prevention, 2017b).

### **Risk Factors**

Sedentary behavior, particularly television watching, is associated with the development of type 2 diabetes in older adults (Ming-Chun, 2016). A Turkish study found that of older adults with type 2 diabetes females, persons of low or moderate income level, and older adults with higher than normal hemoglobin A1C test levels (higher than 7.5) were more likely to rate their health as fair or poor (Kara, 2017). Older adults with type 2 diabetes are more likely to have problems that hinder them from participating in functional living tasks in every-day community life including factors such as delayed reaction time which affects driving ability and decreased postural stability (being able to stand while doing various tasks) (Smith et al., 2014). Impaired balance and nerve damage from uncontrolled type 2 diabetes can increase older adults' risks for falling (Gravesande & Richardson, 2017). Poor diet and nutrition are also risk factors for uncontrolled diabetes. Adherence to a healthy diet was worse for older adults who believed their type 2 diabetes symptoms were variable and thus had a negative outlook regarding their diabetes (Hemphill, Stephens, Rook, Franks, & Salem, 2013). In a study performed in Jordan older adults with type 2 diabetes were less likely than younger adults with type 2 diabetes to cut saturated fats out of their diet (Bawadi, Banks, Ammari, Tayyem, & Jebreen, 2012). Nutrition and diet are important parts of a person's overall health and affect every aspect of life for older adults, especially older adults with type 2 diabetes. As seen from the aforementioned studies, proper nutrition and its effect on one's overall health is something that older adults with type 2 diabetes appear to lack understanding. This lack of understanding is a significant barrier for older adults trying to manage their type 2 diabetes.

### **St. Mary's Supper Club Focus**

The St. Mary's Supper Club, an educational intervention program, will focus on increasing older adults with type 2 diabetes self-efficacy and nutritional knowledge for type 2 diabetes management. Evidence regarding the effectiveness of educational intervention programs and more specifically nutritional education programs is well proven in the academic world. A diabetes nutrition education intervention for older adults was performed in 2006 in nine counties of North Georgia (Redmond et al., 2007). The study consisted of nutrition education classes held at local senior centers, three of which were in neighboring or nearby counties of Athens-Clarke County (Greene, Jackson, and Walton counties). Adults who were members of their local senior centers with diabetes (type 1 or type 2) and participated in a Georgia Older Americans Act Nutrition Program were welcome to attend the program. By the end of the program, participants who had an elevated hemoglobin A1C level at the beginning of the program had significantly ( $p$ -value  $\leq 0.05$ ) lower hemoglobin A1C levels by the end of the program. Program participants also

had statistically significant ( $p\text{-value} \leq 0.05$ ) positive changes in their diabetes self-management activities (from the Summary of Diabetes Self-Care Activities Questionnaire) such as following an eating plan, avoiding high fat foods, spacing carbohydrates, participating in 30 minutes of physical activity, testing blood sugar as recommended by a healthcare professional, and foot care (Redmond et al., 2007). Another example of a successful diabetes nutrition education program is the study performed by Miller, Edwards, Kissling, and Sanville in Greensboro, North Carolina (2002). Miller et al., performed a randomized control trial to evaluate the impact of a nutrition education program with an emphasis on reading food labels on the metabolic outcomes of older adults aged 65 and over with type 2 diabetes. There were significant improvements ( $p\text{-value} = 0.05$ ) in the hemoglobin A1C values for the experimental group with values decreasing below 7%, the goal for glycemic control by the American Diabetes Association (American Diabetes Association, 2016; Redmond et al., 2007). There were no changes in the hemoglobin A1C values for the control group (Redmond et al., 2007). Fasting blood glucose levels decreased significantly as well for the experimental group ( $p\text{-value} = 0.05$ ), but not for the control group. (Redmond et al., 2007). In Taiwan, an educational diabetes intervention was performed with older adults from rural areas (Chao, Usher, Buettner, & Holmes, 2014). The older adults in the intervention group reported lower blood glucose levels and fewer complications due to their diabetes than the control group who did not receive an educational intervention (Chao et al., 2014). In a literature review by Lepard, Joseph, and Cherrington observed that educational interventions improved rural adults with type 2 diabetes behavioral, biological, and diabetes-related outcomes (2015). A study performed in Japan observed that older adults with type 2 diabetes consumption of proteins and fats was inversely related to carbohydrate consumption (Kamada et al., 2012). By teaching older adults to eat healthy carbohydrates such as fruits and vegetables in addition to choosing healthy proteins and fats, older adults in Athens-Clarke County may see an improvement in their health and in turn their diabetes. Nutrition was observed to be negatively associated with depression and anxiety in older adults with type 2 diabetes; demonstrating that proper diet and nutrition could alleviate some of older adults' anxiety regarding their diabetes (Alfonso-Rosa, Pozo-Cruz, Pozo-Cruz, Pozo-Cruz, & Sanudo, 2013). In an educational intervention with type 2 diabetic older adults, participants in the intervention group reported higher sustained self-efficacy and self-regulation of managing their physical activity levels than the control group (Olson & McAuley, 2015). One could presume that similar effects regarding self-efficacy and self-regulation of diet for type 2 diabetes management will be observed in participants of the St. Mary's Supper Club. Lastly, a pilot diabetes education intervention performed in Macon, Georgia adapted the lifestyle modification arm of the National Diabetes Prevention Program into a faith-based and low budget setting to observe if the African American Baptist Church attendees with prediabetes that participated in the diabetes education program would lose weight and have improved blood pressure and fasting blood glucose levels after the intervention (Boltri et al., 2008). All participants had lost weight by the end of the program except for one person, and all results were statistically significant ( $p\text{-value} \leq 0.05$ ). Weight loss compared to baseline weight of participants was 3.6%, BMI decreased by 3.8% from baseline, systolic blood pressure decreased by 11.7% from baseline, diastolic blood pressure decreased by 14% from baseline and fasting blood glucose decreased from baseline levels by 3.8% for the program participants. Subjects maintained their improved fasting

blood glucose levels through the follow-up period of the intervention. For all subjects, the final results 12 months after the intervention were better than baseline values taken at the beginning of the intervention (Boltri et al., 2008). Although a pilot sample with a small sample size of eight individuals, this program represents the feasibility of implementing a successful diabetes education program with a small budget.

### **Rationale for St. Mary's Supper Club**

With the majority of diabetes cases consisting of type 2 cases, adults aged 65-74 are arguably suffering the most from type 2 diabetes when compared to the rest of the population in the state of Georgia (American Diabetes Association, 2017a). There is an evident need for a type 2 diabetes educational intervention program within the Athens-Clarke County area given that Athens-Clarke County, Georgia had a high prevalence of persons with diabetes in 2013 with 2,674 cases in the 95<sup>th</sup> percentile. This statistic is relatively high given the number of healthcare service provider organizations in Athens for a wide variety of economic backgrounds (Centers for Disease Control and Prevention, 2013b). In Georgia, individuals aged 65-74 make up the highest rate per 100 people with diabetes at 23.8 per 100 people or 238 per 1000 people (Centers for Disease Control and Prevention, 2013a).

### **Limited Community Resources**

Although community resources are available for diabetes treatment not many healthcare service organizations provide diabetes education classes and their information is minimal on their websites. For example, Piedmont Athens Regional Hospital offers diabetes education classes, but little information is provided on their website for individuals interested in attending a class (Piedmont Athens Regional, 2017). The University of Georgia College of Family and Consumer Science has an online program called "Focus on Diabetes" with one module on nutrition and diet; however, no live contact person is available for questions (University of Georgia College of Family and Consumer and Sciences, 2016). St. Mary's Health Care System offers diabetes education classes monthly to persons' with a doctor's referral (St. Mary's Health Care System, n.d.-a, n.d.-b). This information is on their website with additional information in one of their Outpatient Diabetes Education Pamphlets. The St. Mary's classes include topics such as the diabetes disease process, blood sugar monitoring, diabetes medications-oral, injectable, and insulin, nutrition particularly carbohydrate counting and meal planning, short and long-term complications of diabetes, exercise and weight control, and goals and behavior change all taught by a certified diabetes educator at the main hospital in Athens, Georgia. The classes are covered by Medicare and most private health insurance providers, and assistance for uninsured individuals is provided as needed (St. Mary's Health Care System, n.d.-b). St. Mary's Health Care System also hosts a monthly free diabetes support group. The support group is facilitated by the diabetes educator and includes a variety of topics and discussions selected by the support group members (St. Mary's Health Care System, n.d.-b). The support group meets on the first Tuesday of every month from 3-4:30 pm (St. Mary's Health Care System, n.d.-b). While the St. Mary's program is a wonderful community resource more information is needed regarding nutrition and diet for older adults with type 2 diabetes, specifically information about how to afford, purchase, prepare, and cook nutritious foods while managing their type 2 diabetes.



### **St. Mary's Supper Club Program Details**

The St. Mary's Supper Club will take St. Mary's Health Care System outpatient diabetes education class and support group a step further by adding a free cooking class/demonstration for patients to gain a better understanding of how to purchase and prepare healthy and tasty diabetic-friendly meals on their own. The class will be taught by a chef from a local Athens restaurant, 5 Bar, a dietitian from St. Mary's, and a health education specialist. Each participant in the class will go home with a recipe card and a take-home cooler of the ingredients needed to prepare the meal on their own at home. Additionally, each class member will go home with a shopping list of ingredients and an explanation of where to buy the ingredients on a budget. Please see the following page for the logic model of this program.

**Logic Model**

**Statement of Health Problem/Solution**

The health problem is the high rates of type 2 diabetes in older adults (65-74) in Athens/Clarke County (ACC), GA. The solution is an educational cooking class known as the St. Mary's Supper Club specifically geared towards diabetes management for older adults with type 2 diabetes. The class will contain information for older adults with type 2 diabetes in ACC about how to plan, purchase the supplies for, and prepare a healthy diabetic friendly meal on their own.

**Assumptions**

- 5 Bar will pay for, transport, send a chef to prepare, and provide meal items in coolers for the St. Mary's Supper Club attendees to take home to prepare on their own.
- St. Mary's Hospital will allow us to use a conference room and access to the cafeteria for patients to view the chef preparing the food.
- St. Mary's will allow us to hire one of their certified diabetes educators.

**Priorities**

To assist older adults with type 2 diabetes in better managing their diabetes through diet and nutrition.  
 To increase older adults with type 2 diabetes knowledge of healthy eating through an educational cooking class.

**External and Environmental Factors**

- Patient transportation to the class
- Patient food allergies

**Inputs**

- 5 Bar Chef, Health Promotion Specialist, Certified Diabetes Educator, and Phlebotomist for blood panels before and after the program and blood draw supplies
- Notebooks for food diaries
- Ingredient lists and recipe cards
- Plates and utensils
- Educational booklets on how to plan and shop for healthy meals/ingredients on a budget
- \$300K budget
- Six \$10 Visa gift cards

**Activities**

- Educational lecture about how to shop for and purchase healthy food on a budget
- Hands-on cooking class that teaches older adults with type 2 diabetes how to prepare healthy food
- Free dinner and take home cooler of ingredients for the meal prepared in class
- Free recipe card of the meal prepared in class
- Free parking and bus passes
- Cook-off at program end to show skills learned, visa gift card prize

**Outputs**

- Pre-tests and post-tests to assess info learned
- Participants complete food diaries reviewed by diabetes educator every 6 months
- Blood panels of cholesterol levels, A1C, and glucose levels taken before and after program to assess dietary guideline adherence
- 2 year program following St. Mary's Diabetes Support Group calendar
- Program immediately after the diabetes support group meeting
- 24 monthly sessions from 4:30pm-6pm

**Short-Term Outcomes**

- Participants practice techniques learned in class on own and continue food diary.
- Participants report overall improved adherence to a healthy diet through food diaries at program end
- Participants will have improved glucose levels, A1C tests, and cholesterol levels by program end
- Participants report increased self-efficacy in perceived ability to plan, prepare and cook a healthy meal
- Program incorporated permanently at hospital

**Mid-Term Outcomes**

- Participants have increased self-efficacy towards planning, purchasing, and preparing a healthy meal on budget
- Participants have necessary skills to budget, purchase, and cook healthy meals
- Participants view healthy eating as fun and social way to manage type 2 diabetes

**Long-Term Outcomes**

- Older adults with type 2 diabetes in (ACC) will report high adherence to dietary guidelines at every physician check-up by presenting food diary to physician.
- Older adults will have glucose levels, cholesterol levels, and A1C tests within the healthy/normal range at physician check-ups.
- Older adults with type 2 diabetes in (ACC) will report little to no health complications due to diabetes.

Figure 1 Program Budget

<b>Project Title:</b> St. Mary's Supper Club								
<b>Period of Performance:</b> August 7th 2018 through August 4th 2020								
<b>Personnel</b>	<b>Salary</b>		<b>% effort</b>	<b>Calendar Months</b>	<b>Year 1</b>		<b>Year 2</b>	<b>Total</b>
Mary Cane, Certified Diabetes Educator	75,845		45%	5.4	34,130		35,837	69,967
Program Instructor	benefits @	30%			10,239		10,751	20,990
Marie Goldberg, Health Education Specialist	53,000		80%	9.6	42,400		44,520	86,920
Program Coordinator	benefits @	30%			12,720		13,356	26,076
<b>Total Personnel</b>					<b>99,489</b>		<b>104,464</b>	<b>203,953</b>
<b>Equipment</b>					<b>8,700</b>		<b>-</b>	<b>8,700</b>
Data Analysis Software					8,700			8,700
<b>Travel</b>					<b>2,808</b>		<b>2,808</b>	<b>5,616</b>
Parking Validation					216		216	432
Bus Passes					2,592		2,592	5,184

Figure 2 Program Budget

<b>Supplies</b>					<b>3,550</b>		<b>1,810</b>		<b>5,360</b>
Phlebotomy Supplies					500		500		1,000
Visa Gift Card \$10 x 6							60		60
Class Materials (educational workbooks, paper for pre-test/post-test, recipe cards, notebooks for food diaries, pens, sign in sheet, measuring cups, plates and utensils)					750		750		1,500
Computer					1,800				1,800
Printing/Photocopying					500		500		1,000
<b>Other Expenses</b>					<b>3,000</b>		<b>3,500</b>		<b>6,500</b>
Phil Stan, Phlebotomist Consultant					2,500		3,000		5,500
Marketing (Flyers/Posters)					500		500		1,000
<b>Total Direct Costs</b>					<b>117,547</b>		<b>112,582</b>		<b>230,129</b>
Indirect Costs @	30%				35,264		33,775		69,039
<b>Total Costs</b>					<b>152,812</b>		<b>146,356</b>		<b>299,168</b>

## **Budget Justification**

### Personnel

#### **Mary Cane, Certified Diabetes Educator, BSN, CDE Program Instructor- 5.4 calendar months (45% effort) in Years 1-2**

Mrs. Cane has 30 years of experience working as a nurse and 20 years of experience as a certified diabetes educator. Mrs. Cane has had experience in leading a diabetes education program in both the inpatient and outpatient settings of two hospitals. Mrs. Cane's experience qualifies her to instruct the St. Mary's Supper Club program content.

Mrs. Cane will carry out the following duties for the proposed project:

- Year 1: Mrs. Cane will instruct the St. Mary's Supper Club program content regarding meal planning and meal preparation on a budget. Mrs. Cane will also distribute the pre-test surveys to class participants and deliver the surveys to Ms. Goldberg to be analyzed and recorded. Mrs. Cane will also distribute class participant food diaries and will facilitate the food diary check-ins on Tuesday, March 5<sup>th</sup>, 2019 and Tuesday, August 6<sup>th</sup>, 2019. Mrs. Cane will distribute free parking passes and bus passes to class participants. Mrs. Cane will attend all evaluation meetings with Ms. Goldberg the health education specialist, phlebotomist, volunteer chefs from 5 Bar, and the St. Mary's Health Care System Board of Directors, the stakeholders over the program.
- Year 2: Mrs. Cane will instruct the St. Mary's Supper Club program content regarding meal planning and meal preparation on a budget. Mrs. Cane will also distribute the post-test surveys to class participants and take the results to Ms. Goldberg to be analyzed and recorded. Mrs. Cane will facilitate in the food diary check-ins on Tuesday, March 3<sup>rd</sup>, 2020 and on Tuesday, August 4<sup>th</sup>, 2020. Mrs. Cane will distribute free parking passes and bus passes to class participants. Mrs. Cane will attend all evaluation meetings with Ms. Goldberg the health education specialist, phlebotomist, volunteer chefs from 5 Bar, and the St. Mary's Health Care System Board of Directors, the stakeholders over the program. Mrs. Cane and Ms. Goldberg will report the final program results to the St. Mary's Health Care System Board of Directors.

#### **Marie Goldberg, Health Education Specialist, MPH, MCHES, Program Coordinator- 9.6 calendar months (80% effort) in Years 1-2**

Ms. Goldberg has 2 years of experience working as a certified health education specialist in the hospital setting and has worked exclusively with diabetic patients for 1 year. Ms. Goldberg's experience qualifies her to coordinate the St. Mary's Supper Club program.

Ms. Goldberg will carry out the following duties for the proposed project:

- Year 1: Ms. Goldberg will recruit class participants by receiving a list of the usual diabetes support group attendees at St. Mary's from Mrs. Cane, the diabetes educator. Ms. Goldberg will then ensure the intended St. Mary's Supper Club members meet the age requirement of

being 65 or older. Additional class participants will be recruited by Ms. Goldberg through placing pamphlets in the diabetes education discharge packets that nurses distribute to patients with diabetes in addition to posting the flyers on bulletin boards and pamphlets about the program by the guest elevator locations. Ms. Goldberg will also see that the St. Mary's Supper Club information is a featured event on the St. Mary's Website and Facebook page and is featured on the TV advertisements in the St. Mary's Hospital cafeteria and lobby areas. Ms. Goldberg will also see that the program is featured as one of the rotating screen savers on staff computers. Ms. Goldberg will purchase parking validation passes and Athens Transit bus passes for class participants. Ms. Goldberg will facilitate the arrangement for the use of a conference room for the St. Mary's Supper Club to meet prior to the cooking demonstrations. Ms. Goldberg will coordinate with the chef from Five Bar to see that the chef knows where to go to set up his/her cooking utensils and supplies for the demonstration as well as where to store the already prepared meals for class participants. Ms. Goldberg will also direct the chef on where to keep the take-home ingredients for class participants in the coolers provided by Five Bar. Ms. Goldberg will obtain and deliver the notebooks for class participants to use as food diaries and the diabetes education workbooks. Ms. Goldberg will obtain recipe cards and will type up each class's recipe on recipe cards for the participants to take home. Ms. Goldberg will collect the sign-in sheets from Mrs. Cane after each meeting and the results from class participants after each food diary check-in. Ms. Goldberg will also collect pre-test results and the lab results from the phlebotomist consultant after each blood draw to include in each patient's medical file. Copies of the labs will also be sent to each class participant by Ms. Goldberg. Ms. Goldberg will purchase a laptop computer with adequate data analysis software such as SAS. Ms. Goldberg will be in charge of running all statistical analyses regarding patient progress. Ms. Goldberg will attend all evaluation meetings with Mrs. Cane the diabetes educator, phlebotomist, volunteer chefs from 5 Bar, and the St. Mary's Health Care System Board of Directors, the stakeholders over the program.

- Year 2: Ms. Goldberg will continue arranging for conference rooms for the St. Mary's Supper Club to meet. Ms. Goldberg will also continue to ensure the chef from Five Bar knows where to go and what to do. Ms. Goldberg will continue collecting the names of each person in attendance to the program and will continue running data analyses on participant's data from food diary check-ins, the final lab results at the end of the program as well as the post-test data from each class participant. Ms. Goldberg will continue typing each class's recipe onto a recipe card for participants to take home. Ms. Goldberg will evaluate all of the patient data and prepare a report for each patient to take home in addition to recording the data in each patient's medical file. Ms. Goldberg will also be in charge of obtaining the measuring cups and the \$20 Visa Gift Card for the cook-off at the end of the program. Ms. Goldberg will attend all evaluation meetings with Mrs. Cane the diabetes educator, phlebotomist, volunteer chefs from 5 Bar, and the St. Mary's Health Care System Board of Directors, the stakeholders over the program. Ms. Goldberg and Mrs. Cane will present the final program results to the St. Mary's Health Care Board of directors.

## Travel

### **Parking validation passes** (\$216 each year for 12 class participants, Years 1-2)

In Years 1 and 2 we request funds to reimburse class participants for parking in St. Mary's paid lot at \$1.50 per parking pass. This will allow class participants to not worry about the financial burden of paying for parking.

### **Bus fare cards** (\$2,592 each year to purchase Athens Transit Senior Citizen Smart Passes, Years 1-2)

In Years 1 and 2 we request funds to pay for Athens Transit Senior Smart Passes for class participants who do not own a motor vehicle. The cost of a Senior Smart Pass is \$18 and includes 22 trips.

## Equipment and Supplies

### **Data Analysis Software** (\$8,700, Year 1)

We request funds to purchase a data analysis software in Year 1 to run the statistics from class participant data. This data analysis software will be dedicated only for the use of the St. Mary's Supper Club for recording and analyzing class participant data. The total data analysis software cost in Year 1 is \$8,700.

### **Laptop Computer** (\$1,800, Year 1)

We request funds to purchase a laptop computer in Year 1 for the data analysis software to be added in order to record and analyze class participant data. The laptop will be exclusively used for the St. Mary's Supper Club.

### **Phlebotomy supplies** (\$500 each year, Years 1-2)

We request funds for phlebotomy supplies such as test tubules and elastic bands in Years 1 and 2 for the phlebotomist consultant to perform class participant lab work regarding their hemoglobin A1C levels, cholesterol levels, and their blood glucose levels.

### **Visa Gift Card** (\$60, Year 2)

We request funds for the purchase of six \$10 Visa gift cards in Year 2 as the grand prize incentive for the class participant cook-off at the end of the program.

### **Class Materials** (\$750 each year, Years 1-2)

We request funds of \$750/year to cover the cost of class materials for the program. We will need items including diabetes education workbooks, recipe cards, composition notebooks, and two sets of plastic measuring cups for the cook-off.

**Printing/Photocopying** (\$500 each year, Years 1-2)

We request funds of \$500/year to cover the cost of printing and photocopying. We will need to produce flyers, pamphlets, recipe cards, and patient progress and lab results at the beginning and end of the program.

Other Expenses**Phil Stan, Phlebotomist Consultant** (Year 1 \$2,500, Year 2 \$3,000)

This program will retain the services of Mr. Phil Stan, a St. Mary's Hospital phlebotomist with a stipend of \$2,500 in Year 1 and \$3,000 in Year 2.

- Year 1: Mr. Stan will take blood panels from class participants on the first day of the program (Tuesday, August 7<sup>th</sup>, 2018) and run hemoglobin A1C tests, cholesterol levels, and blood glucose level assessments. Mr. Stan will deliver the results to Ms. Goldberg for recording and dissemination to class participants. Mr. Stan will attend the first program evaluation meeting.
- Year 2: Mr. Stan will take blood panels from class participants on the last day of the program (Tuesday, August 4<sup>th</sup>, 2020) and run hemoglobin A1C tests, cholesterol levels, and blood glucose level assessments. Mr. Stan will deliver the results to Ms. Goldberg for recording and dissemination to class participants. Mr. Stan will attend the last program evaluation meeting.

**Marketing** (\$500 each year, Years 1-2)

- Marketing materials will be created and disseminated throughout St. Mary's Hospital during Years 1 and 2 of the program. Informational pamphlets and flyers will be created and disseminated throughout all of St. Mary's Hospital and pamphlets will be placed in discharged diabetic patient information packets. Additionally, advertisements will be placed on the St. Mary's website, Facebook page, and televisions located in the lobby and cafeteria of St. Mary's Hospital. Marketing costs will cover specialized printing services such as color printing and heavy grade paper and/or cardstock.

**Total personnel costs are \$99,489 in year 1 and \$104,464 in year 2 and include annual benefit plans for St. Mary's Health Care System of 30%. Year 2 includes an annual salary increase of 5%.**

**Indirect costs are \$35,264 for year 1 and \$33,775 for year 2 at the Negotiated Facilities and Administration rate of 30% for St. Mary's Health Care System.**



## **Marketing and Recruitment**

### **Inclusion Criteria**

Participants will be included if they meet the following criteria: ages 65-74 years, be diagnosed with type 2 diabetes, and are living in the Athens-Clarke County area.

### **Exclusion Criteria**

Adults younger than age 65 or older than 74, adults without type 2 diabetes, adults with type 1 diabetes, adults with major depressive disorder or other mental disorders including bipolar disorder, schizophrenia, and autism were excluded from this program. Adults living outside of the Athens-Clarke County area were also excluded from this program due to the highest prevalence of type 2 diabetic older adults aged 65-74 living in the Athens-Clarke County area (Centers for Disease Control and Prevention, 2013b).

### **Recruitment and Marketing Strategy**

An announcement about the program will be given at the monthly St. Mary's Diabetes Education Class and Support Group. An announcement will be given at the Piedmont Athens Regional Diabetes Education Class. Advertisements on the television screens throughout St. Mary's Hospital and on staff computers as screen savers will be displayed throughout St. Mary's Hospital. Advertisements will be placed on the front desks and bulletin boards at the Athens YMCA and Athens YWCO. Announcements for the program will be placed in every diabetes education packet given to patients seen by diabetes education at St. Mary's Hospital. Paper handouts will also be placed at the information and registration desks at St. Mary's Hospital for new patients at St. Mary's Hospital. Information about the program will be shared on the Athens Community Council on Aging (ACCA) and The Osher Lifelong Learning Institute (OLLI) at the University of Georgia members' email Listservs and Facebook pages. Figure 3 is an example of the recruitment email that will be sent out on the Listservs. Interested participants will fill out an online screening questionnaire to ensure potential class members truly are within the age range, have type 2 diabetes, and do not have a mental disorder including major depressive disorder, bipolar disorder, schizophrenia, or autism. If unable to access the link a potential program attendee may call and do an oral screening over the phone with Ms. Goldberg the health education specialist over the project. The oral screening option is not openly advertised on flyers and advertisements as the online questionnaire is better suited for screening large numbers of potential program attendees.

**Figure 3****St. Mary's Health Care System**

Participants are needed for **St. Mary's Supper Club**, a diabetes education class focusing on diabetes management through diet.



**WHO:** Adults ages 65-74 with type 2 diabetes

**WHAT:**

- Complete an online screening survey to determine eligibility (takes 10 minutes max)
- Come to St. Mary's Hospital the first Tuesday of each month from 4:30 PM to 6:00 PM for an hour lecture and discussion section regarding diabetes and planning, preparing, and cooking a healthy meal. A free dinner by an Athens chef will follow the lecture and discussion section and groceries to make the meal at home are provided for every class participant.

**WHY JOIN:**

- Learn how to better manage your type 2 diabetes through dietary choices
- Free cooking demonstration with a chef from 5 Bar
- Free dinner and groceries
- Free parking passes to St. Mary's parking deck and bus passes to the Athens Transit bus line

**HOW MUCH TIME:** One hour and 30 minutes once a month starting Tuesday, August 7<sup>th</sup>, 2018 from 4:30 PM to 6:00 PM until Tuesday, August 4<sup>th</sup>, 2017.

**MY TIME IS LIMITED:** Dinner and groceries will be provided at every class along with parking passes for the deck. Bus passes will be given out at the first class although if you miss the first class you can still have a bus pass for Athens Transit.

**I WANT TO PARTICIPATE:** Complete our screening survey at this link

[www.stmaryshealthcare.com/supperclub-questionnaire](http://www.stmaryshealthcare.com/supperclub-questionnaire)

**QUESTIONS:** Email Marie Goldberg MPH, MCHES at [mgoldberg@stmarys.com](mailto:mgoldberg@stmarys.com) or call (706)-438-9990

Thank you for your time.

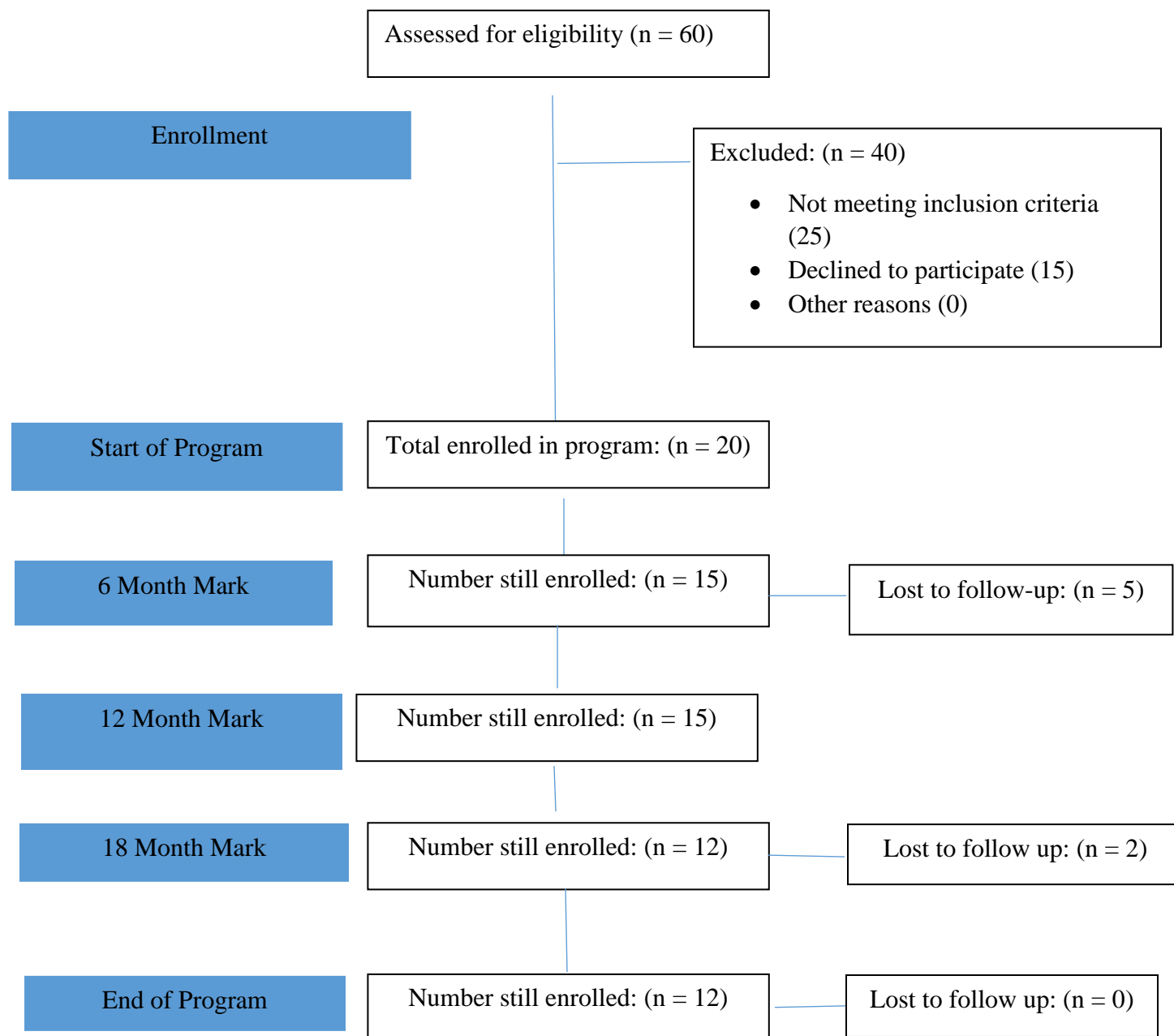
Marie Goldberg, MPH, MCHES

St. Mary's Supper Club Project Coordinator



## **Retention Plan**

Participants will take a pre-test of their knowledge regarding type 2 diabetes and diet at the first class and will take a post-test of their knowledge regarding type 2 diabetes and healthy eating on the last class of the program. Participants will be supplied with journals to record their dietary habits at home to check in with the diabetes educator every six months. Class participants will have ten minutes at the beginning of each class session to discuss how the past month went in regards to maintaining their food journals and their efforts to manage their diabetes through their diet at home. Blood panels will be taken from participants on both the first day and last days of the program. On the last day of the program, class attendees will participate in a cook-off to demonstrate the cooking skills they learned and each member of the winning team will receive a \$10 Visa gift card. A free dinner and cooking demonstration by a chef from 5 Bar will occur during the last half hour of every class during the program. Groceries to cook the dinner at home will be sent home with participants following every class during the program. To account for transportation barriers the program has two solutions: (1.) Class attendees will be given two Athens Transit Senior Citizen Smart passes that allow for a total of 22 trips each without a time limit and (2.) Class attendees will also be given free parking passes for parking in the St. Mary's Hospital deck. These two methods alleviate the burden of travel costs for class attendees. The retention goal for St. Mary's Supper Club is 60%. To measure program retention, participants will be asked to sign a paper sign-in sheet before the start of each class. The health education specialist will collect this sign-in sheet at the end of every meeting to track participant attendance and program retention. Based on previous class attendance for the St. Mary's Diabetes Education classes, the maximum number of persons who will remain throughout the duration of the program is around twelve people. Ms. Goldberg, the health education specialist and project coordinator, will call program participants one week in advance prior to the day of each class session and send an email reminder three days before each class session. Figure 4 is a visual representation of our retention tracking plan.

**Figure 4 Retention Plan Example**

## Theoretical Framework

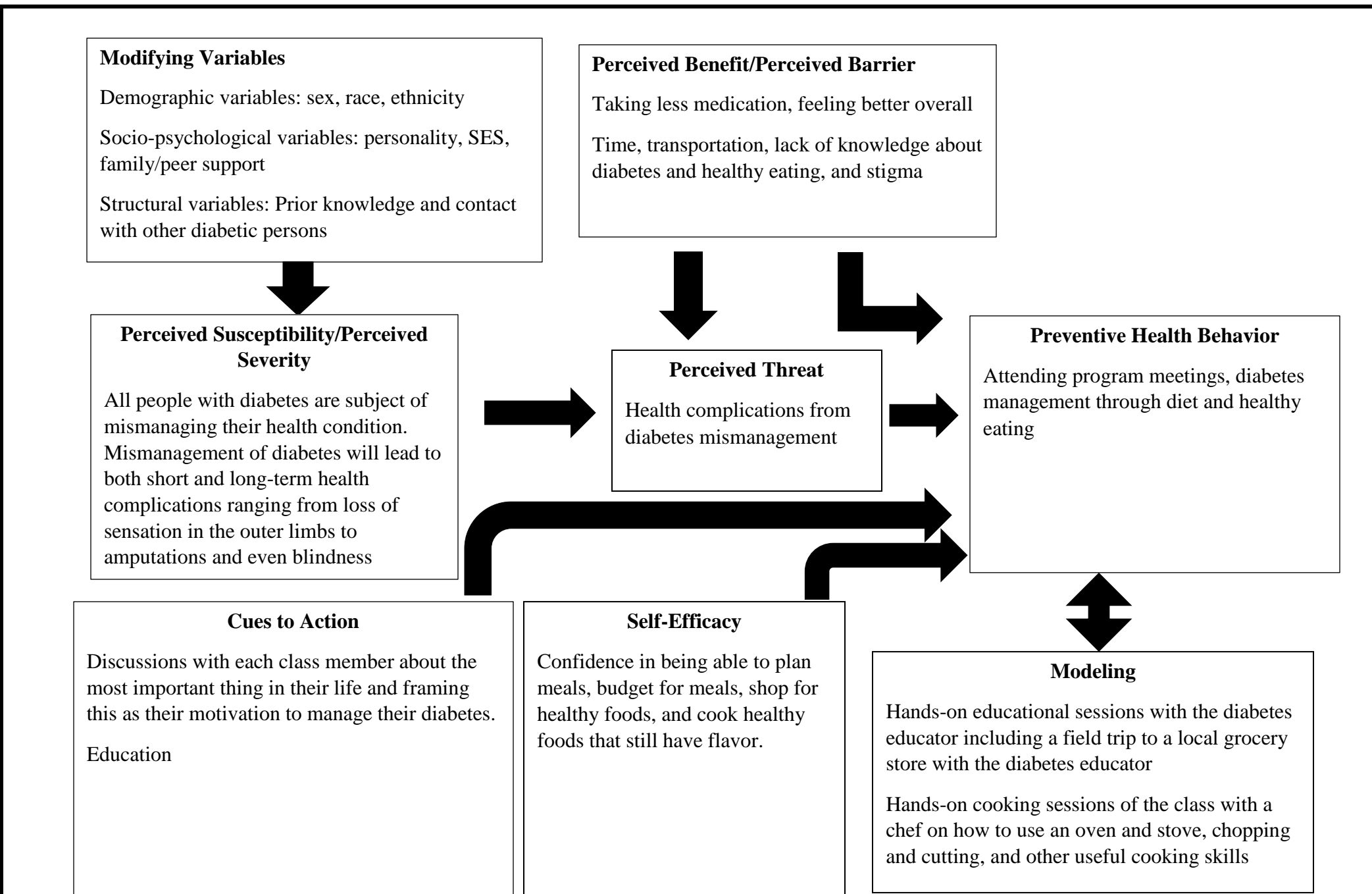
A variety of health promotion theories and models have been used to work with type 2 diabetic patients. The St. Mary's Supper Club seeks to increase dietary education of older adults aged 65 to 74 with type 2 diabetes on how to better care for themselves through healthy eating. The St. Mary's Supper Club seeks to establish healthy eating behaviors in program attendees and to avoid the consequences of mismanaging diabetes. The Health Belief Model and Social Cognitive Theory are two theories that well represent elements of the St. Mary's Supper Club program.

The St. Mary's Supper Club will use a combination of the Health Belief Model and Social Cognitive Theory to teach class participants how to effectively manage their type 2 diabetes through their diet. The Health Belief Model was invented in 1966 by a group of researchers examining the use of health services (Rosenstock, 1966). Constructs of the Health Belief Model that represent St. Mary's Supper Club include: perceived susceptibility, perceived severity, perceived barriers and perceived benefits, cues to action, self-efficacy, and modifying factors. Perceived susceptibility relates to older adults likelihood of developing other health issues due to mismanagement of their type 2 diabetes. Perceived severity relates to how severe or bad the health issues would be if the older adults continued to mismanage their type 2 diabetes. Class attendees would be taught the common short term and long term complications of diabetes mismanagement and how each class attendee is susceptible to these complications due to their diagnosis of type 2 diabetes. Perceived benefits of managing type 2 diabetes will be discussed with class attendees such as being able to take less medication and feeling better overall. Perceived barriers to changing diabetes management would be addressed through a discussion session with class attendees to better understand barriers for each class member. Some barriers may be lack of time, lack of transportation, lack of knowledge regarding diabetes and healthy eating, and the general stigma of having diabetes and not wanting to be identified in public setting for having diabetes. A cue to action, or something that makes the intended audience act on a behavior, would be identified for each class member either through an open group discussion or through writing down the most important thing in each person's life and submitting responses to the diabetes educator or health education specialist. Self-efficacy, or one's belief in their ability to do a specific task, will be addressed by helping each class member feel that they can change their dietary habits and behaviors to better manage their type 2 diabetes. Class participants will be taught basic nutrition facts and cooking skills to enhance self-efficacy levels for changing dietary patterns and behaviors. Modifying factors such as demographic variables including race, ethnicity, and sex will play a role in class attendees. Socio-psychological variables such as each class participant's personality type, socio-economic-status (SES), level of support from friends and family, and structural variables such as prior knowledge of diabetes and prior contact to other persons with diabetes will also play roles among the St. Mary's Supper Club class attendees.

Social Cognitive Theory, also known as Social Learning Theory, was created by Albert Bandura (Bandura, 1989). Social Cognitive Theory draws upon learning through modeling and a person's self-efficacy to mimic the behavior shown (Bandura, 1989). Social Cognitive Theory constructs used in the St. Mary's Supper Club are modeling and self-efficacy. St. Mary's Supper Club will use modeling by having a cooking demonstration at each class session to show class attendees how to prepare a budget-friendly and healthy meal. Hands-on sessions of the education

and cooking demonstration part of the class will help increase class attendees' self-efficacy to prepare these healthy and budget-friendly meals on their own. Figure 5 is the representative of the theory model for this program.

**Figure 5 St. Mary's Supper Club Program Theory Model**



### **Program Description**

The program will consist of 24 classes with each class meeting once a month on the first Tuesday of every month from 4:30-6:00 p.m. following the St. Mary's Diabetes Support Group. A chef demonstrated dinner will be provided for class attendees as well as coolers of groceries and recipe cards to make the meal at home. Handouts of the PowerPoint slides for each class session will be given to class attendees to review at home after the class. Class members will keep food journals starting after the first class on Tuesday, August 7<sup>th</sup>, 2018 and will check in with the diabetes educator every six months to monitor their progress of dietary changes at home. A pretest will be given to class participants on the first day of the program Tuesday, August 7<sup>th</sup>, 2018 and a post-test the last day of the program Tuesday, August 4<sup>th</sup>, 2020. Blood panels to measure blood glucose levels, total cholesterol levels, LDL cholesterol, HDL cholesterol, and hemoglobin A1C will also be measured on the first day of the program, Tuesday, August 7<sup>th</sup>, 2018 and the last day of the program, Tuesday, August 7<sup>th</sup>, 2020. Table 1.1 gives an overview of the curriculum and the material that will be covered during each class session of the program.



**Table 1.1 Curriculum**

Curriculum for St. Mary's Supper Club		
Months	Topics	Content Discussed
1-3	Diabetes basics and healthy eating in general	Explain what type 2 diabetes is, the process of type 2 diabetes as a chronic disease, short term and long-term complications of diabetes mismanagement, and how healthy eating in general is beneficial for good health of everyone including non-diabetics. Discuss perceived benefits and barriers of diabetes management and individual cues to action for class attendees.
4-6	What to eat and when: carbs, proteins, fats and meal times	Explain the importance of eating balanced meals throughout the day in order for blood glucose (sugar) levels to remain stable. Explain proper serving sizes and how to read a food label. Explain the difference between carbohydrates, proteins, and fats and how to identify each one in the kitchen and grocery store.
7-9	How to shop: cheap but healthy	Explain the importance of eating before going to the grocery store, having a list with a set budget marked on the list, and having a calculator either in a pocket or using a phone calculator to tally up prices of grocery items. How to shop for fresh fruits and vegetables and lean meats and what to look for in purchasing these items. Field trip to Alps Kroger with diabetes educator and health education specialist.
10-12	Cooking basics	Explain proper cooking techniques such as using a thermometer to test meat temperatures, chopping and cutting techniques of various vegetables, and how to properly use the oven and stovetop.
13-15	Cooking vegetables	Explain how to cook various vegetables for different dishes and how to maintain flavor and health benefits in these dishes.
16-18	Cooking meats	Explain how to cook various meats for different dishes and how to maintain flavor and health benefits in these dishes.
19-21	Easy main dishes for breakfast, lunch, and dinner	Explain how to cook quick and easy dishes for breakfast, lunch, and dinner.
22-24	Putting it all together	Class participants will practice their budgeting and meal planning skills on weeks 22 and 23 and on week 24 will participate in a cook-off that demonstrates all of the skills they have learned from the program.

## **Explanation of Curriculum**

Each class emphasizes one aspect of diabetes management through dietary changes for adults aged 65 or older with type 2 diabetes. Topics range from what diabetes is and healthy eating in general, portion sizes of fats, carbohydrates, and proteins, identifying fats, carbohydrates, and proteins, identifying these macronutrients in the grocery store, preparing a healthy diabetic meal on a budget, and how to plan and cook healthy diabetic meals in the kitchen. Each class promotes self-efficacy for older adults with type 2 diabetes regarding planning, preparing, and cooking a healthy diabetic friendly meal to better manage their type 2 diabetes. Classes are grouped so that every three months of the program contain a related topic.

### Classes 1-3

The first three classes will focus on educating class attendees about what type 2 diabetes is in general and healthy eating. Topics covered in the first three classes include defining diabetes within the body regarding insulin resistance, the prevalence rates of diabetes and type 2 diabetes in the United States, the process of diabetes as a chronic disease and the short-term and long-term complications of diabetes mismanagement including peripheral neuropathy or loss of sensation in the extremities, potential vision loss, and even potential limb loss (American Diabetes Association, 2017b). The benefits of healthy eating for everyone will be discussed with class attendees and class attendees will be asked to think of what they would define as healthy eating. Perceived benefits of diabetes management would be discussed during these three classes as well as perceived barriers to diabetes management. Class attendees will openly discuss their individual cues to action that will encourage them to better manage their diabetes. If a class member is uncomfortable sharing their cue to action with others in the class he or she can write their cue to action down on paper or turn the paper in to the diabetes educator or health education specialist.

### Classes 4-6

Classes four through six will focus on explaining the importance of maintaining stable blood glucose levels through meals. Class participants will be taught what fats, carbohydrates, and proteins are and proper portion sizes of fats, carbohydrates, and proteins. Class participants will be taught how to identify in the grocery store and categorize foods into these three macronutrient groups (fats, carbohydrates, and proteins) such as chicken in the protein group, olive oil in the fat group, and spinach in the carbohydrate group. Class participants will be taught how to identify and read the different parts of a food label including where to identify added sugars, sodium, fats, and the serving size for work that food product.

### Classes 7-9

Classes seven through nine will focus on shopping in the grocery store for healthy foods on a budget. Topics covered will include: explaining the importance of eating before going to the grocery store to prevent impulsive buying of unneeded unhealthy items, having a grocery list with a set budget marked on the grocery list to prevent overspending, teaching class participants how to read and understand the prices in the grocery store such as the cost of an item per ounces, teaching class participants to carry a calculator with them to the grocery store to tally up the items in their cart to ensure they stay on budget. Class participants will also be taught how to shop for lean meats such as identifying the types of lean meats, the cost per pound, and

expiration dates, and how to shop for fresh fruits and vegetables by identifying different kinds of fruits and vegetables, the cost per pound, and how to look for it expiration dates for any bumps or bruises on the fruits or vegetables. On class number nine, class attendees will meet the diabetes educator and health promotion specialist at the Alps Road Kroger to practice the skills they have learned from classes seven and eight. Dinner will still be served for class attendees on class number nine after returning from the field trip to the Alps Kroger as well as recipe cards and groceries to make the meal on their own.

#### Classes 10-12

Classes ten through twelve will focus on teaching class participants basic mechanisms of cooking. Class participants will be taught proper cooking temperatures for fish, poultry, pork, and beef. Class participants will be shown around a section of the cafeteria kitchen by the chef and diabetes educator will be taught basic kitchen safety such as what to do if there is a fire in the microwave oven or conventional oven, how to properly use a meat thermometer, cut and chop various vegetables, and how to properly use the oven including the bake and broiler settings and the stovetop for boiling or grilling items in a pan.

#### Classes 13-15

Classes thirteen through fifteen be taught by the diabetes educator and a chef from 5 Bar in a section of the St. Mary's cafeteria kitchen and the diabetes educator and will focus on teaching class participants how to cook basic vegetable dishes to go as sides with a main dish or to be the main dish of a meal. Class participants will be taught healthy but flavorful ways of cooking vegetables through various methods including oven roasting, stir-frying, and broiling. Each of these three classes will focus on a particular vegetable dish.

#### Classes 16-18

Classes sixteen through eighteen will be taught by the diabetes educator and a chef from 5 Bar and focus on teaching class participants how to cook meat and fish dishes. Class participants will be taught healthy but flavorful waves of cooking fish and meats including baking in the oven, broiling in the oven, and sautéing in a pan on the stove top. Each class will focus on a different type of meat including a fish dish, a chicken dish, and a lean ground beef dish.

#### Classes 19-21

Classes nineteen through twenty-one will be taught by the diabetes educator and a chef from 5 Bar. Class participants will be taught quick and easy budget-friendly dishes for breakfast, lunch, and dinner. Class nineteen will focus on breakfast dishes, class twenty will focus on lunch dishes, and class twenty-one will focus on dinner dishes.

#### Classes 22-24

Classes twenty-two through twenty-four will allow for class participants to demonstrate the skills they have learned through the program to the diabetes educator and health education specialist. Class numbers twenty-two and twenty-three will allow for class participants to demonstrate their skills of being able to identify healthy foods from the three macronutrient groups and shop on a budget through a mock shopping experience with the diabetes educator.

Class participants will be provided with a list of items and prices with a budget of forty dollars and will have to create a hypothetical meal from the list of items and prices while remaining under forty dollars. Class number twenty-four is set up as a cook-off where two groups of the class participants will divide into teams and prepare one of the meals budgeted for on classes twenty-two or twenty-three in a section of the St. Mary's cafeteria kitchen. The diabetes educator and health promotion specialist will be the judges of the cook-off and the winning team members will each receive a ten dollar Visa gift card. A timeline of the program (Figure 5) is on page 29 and 30.

**Table 2.1 Program Timeline**

May 2018	Jun.	Jul.	August	Sept.	Oct.	Nov.	Dec. 2018	Jan. 2019	Feb.	Mar.	Apr.	May	Jun. 2019
Program recruitment and selection			Class participants start keeping food journals										
●			→ ●										
			● →										
			● →										
Recruit 5 Bar Chef for each session			● →										
●			→										
Program development and support			● →										
●			→										
Formative evaluation			● →										
●			→										
Facilities planning/management				Process evaluation									
●				● →									
				→									

**Table 2.2 Program Timeline**

July 2019	Aug.	Sept.	Oct.	Nov.	Dec. 2019	Jan. 2020	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug. 2020
Class participants keep food journals													Summative evaluation
Program classes meet monthly													Blood panel from participants
Recruit 5 Bar Chef for each session													Program classes end
Program development and support													
Formative evaluation													
Facilities planning/management													
Process evaluation													

## **Evaluation Plan**

Evaluation will include all members of the St. Mary's Supper Club team including the diabetes educator, health education specialist, phlebotomist, the chefs who volunteer from 5 Bar, and the key stakeholders, the St. Mary's Health Care System Board of Directors. Feedback from participants in the St. Mary's Supper Club will also be assessed to better improve the St. Mary's Supper Club program. Both qualitative and quantitative data will be used to effectively evaluate the St. Mary's Supper Club program during the course of the two-year program and after the program has ended.

## **Evaluation Questions**

- Did at least 25% of the participants demonstrate statistically significant ( $p\text{-value} \leq 0.05$ ) improvements in their hemoglobin A1C levels, total cholesterol, LDL, and HDL cholesterol levels, and blood glucose values?
- By the end of the program did at least 40% of participants report decreases in added sugar consumption and saturated fats through their food diaries?
- By the end of the program did at least 40% of participants report increases in fruit and vegetable consumption through their food diaries?
- Did program participants feel competent in planning, preparing, and cooking a healthy diabetic friendly meal?

## **Formative Evaluation**

The formative evaluation of this program was conducted by the health education specialist, diabetes educator, and the St. Mary's Health Care System Board of Directors who are the key stakeholders over this program. A needs assessment was conducted to assess the need for the St. Mary's Supper Club program in the Athens-Clarke County (ACC) area. Data from the Centers for Disease Control and Prevention used to examine diabetes rates in Georgia and the ACC area. Older adults ages 65-74 were found to have a statistically higher rate of diabetes in Georgia than other age groups at 28.3 adults per 100 people (Centers for Disease Control and Prevention, 2013a). In ACC, older adults aged 65-74 had a comparably high prevalence rate of persons with diabetes in 2013 with 2,674 cases in the 95<sup>th</sup> percentile despite the area having health care services for a wide variety of economic backgrounds (Centers for Disease Control and Prevention, 2013b). Additional research was performed to examine the effectiveness of previous educational interventions for older adults with type 2 diabetes. Please refer to the needs assessment content of this program plan on page 5 for more specific details of the needs assessment. The target population will be reached through advertisements placed throughout St. Mary's Hospital in addition to email notifications sent through the Listservs of organizations such as the Athens Community Council on Aging in the ACC community. The health education specialist will also make announcements about the program at monthly meetings of the St. Mary's outpatient diabetes education class and the monthly meetings of the Georgia Piedmont Athens Regional Hospital's diabetes education classes prior to the start of the St. Mary's Supper Club program in August of 2018. The retention goal for St. Mary's Supper Club is 60%. To measure program retention, participants will be asked to sign a paper sign-in sheet before the start of each class. The health education specialist will collect this sign-in sheet at the end of every meeting to track participant attendance and program retention. For more specific details

regarding marketing and recruitment, please see pages 17 and 18. For more specific details regarding the retention plan please see pages 19 and 20.

### Process Evaluation

Process evaluation will consist of monthly team meetings with the health education specialist, diabetes educator, and volunteer chefs from 5 Bar. Meetings will be held the week after the St. Mary's Supper Club program meeting in order for the health education specialist to analyze program participant data from that particular month's class. The health education specialist and diabetes educator will meet with stakeholders bi-monthly to inform stakeholders of program progress. Following every class, participants will be asked to submit a paper feedback form before leaving for home about what they liked about that month's class, what they disliked about the class, and what they think should be added or removed from the program. Participant feedback will be reviewed and recorded by the health education specialist and discussed at each monthly meeting with the diabetes educator and the volunteer chefs from 5 Bar. The program will be adapted based on participant feedback throughout the course of the two-year program.

### Summative Evaluation- Impact and Outcome Measures

All final program results will be compiled by the health education specialist and diabetes educator and reported to St. Mary's Supper Club program stakeholders.

**Goal 1.** St. Mary's Supper Club attendees will report increased adherence to the United States Department of Agriculture (USDA) 2015-2020 Dietary Guidelines (United States Department of Health and Human Services and United States Department of Agriculture, 2015) by the end of the two-year program.

- **Objective 1.** St. Mary's Supper Club attendees will keep food diaries of what they cook and eat at home and will show their food diaries to the diabetes educator every six months (Tuesday, March 5th, 2019, Tuesday, August 6th, 2019, Tuesday, March 3rd, 2020, and Tuesday, August 4th, 2020), for a total of four checkpoints throughout the program to ensure attendees are understanding how to apply class concepts at home.
- **Objective 2.** By the second food diary check (Tuesday, August 6th, 2019) with the diabetes educator, 20% of class attendees will report a statistically significant ( $p\text{-value} \leq 0.05$ ) increase in consumption of fruits and vegetables and a statistically significant decrease ( $p\text{-value} \leq 0.05$ ) in consumption of added sugars and saturated fats through their food diaries.
- **Objective 3.** By the last food diary check (Tuesday, August 4th, 2020), 40% of St. Mary's Supper Club attendees will report a statistically significant ( $p\text{-value} \leq 0.05$ ) increase in consumption of fruits and vegetables and a statistically significant decrease ( $p\text{-value} \leq 0.05$ ) in consumption of added sugars and saturated fats through their food diaries.

Food journals also known as food diaries have been used in numerous studies to measure weight loss, food allergies, and other health conditions. The purpose of using food diaries in this program is to track participants' consumption of fruits and vegetables and added sugars and saturated fats. Participants will track their at home diet and food habits by recording them in notebooks given to them as part of the program. The diabetes educator will check-in with each



participant every six months to discuss each participant's at-home food patterns and participant adherence to the USDA 2015-2020 Dietary Guidelines (United States Department of Health and Human Services and United States Department of Agriculture, 2015). The health education specialist will compile each participants' results from the food diary check-ins to examine statistically significant trends in the dietary patterns of the participants.

**Goal 2.** St. Mary's Supper Club attendees will have the ability to demonstrate and apply their new nutritional knowledge and self-efficacy of their cooking skills in their own lives by the end of the program.

- **Objective 1.** St. Mary's Supper Club attendees will take a brief 10 question pre-test assessing their current knowledge regarding how to plan, purchase, and prepare a healthy diabetic friendly meal at the beginning of the class (Tuesday, August 7th, 2018) and a post-test that reassesses these same concepts at the end of the class (Tuesday, August 4th, 2020) when attendees will have learned more information.
- **Objective 2.** St. Mary's Supper Club attendees will demonstrate the skills they have learned in their class in a cook-off on the last day of the program (Tuesday, August 4th, 2020) for a \$10 Visa gift card.
  - Ingredients will be provided by 5 Bar and class attendees will plan and prepare one of the meals demonstrated in class on their own in the St. Mary's Hospital cafeteria kitchen. Class attendees will be divided into two teams and each team will have to show the ingredient list for the recipe they chose and approximately how much each item would cost in the store. The diabetes educator will observe if each team member properly plans a healthy meal within a budget of \$40. The diabetes educator will observe if each team member properly measures out each ingredient, uses proper cutting and slicing techniques, and adheres to appropriate USDA 2015-2020 Dietary Guideline portion sizes. The team that correctly plans and prepares the chosen meal within the budget will win a \$10 Visa gift card for each team member.

The knowledge-based pre and post-tests of program participant knowledge will be based on the Summary of Diabetes Self-Care Activities questionnaire. This questionnaire is a reliable and valid assessment of diabetes self-management skills including general diet, specific diet, exercise, blood-glucose testing, foot care, and smoking (Toobert, Hampson, & Glasgow, 2000). The diabetes educator and health education specialist will format this questionnaire into a ten question pre-test to assess participants' current knowledge regarding how to plan, purchase, and prepare a healthy diabetic friendly meal at the beginning of the class (Tuesday, August 7th, 2018) and a post-test that reassesses these same concepts at the end of the class (Tuesday, August 4th, 2020) when attendees will have learned more information.

**Goal 3.** St. Mary's Supper Club attendees will have improved blood glucose levels, cholesterol levels, and hemoglobin A1C test results by the end of the program.

- **Objective 1.** Blood panels including blood glucose levels, total cholesterol, LDL cholesterol, and HDL cholesterol, and a hemoglobin A1C test will be taken by a phlebotomist from program participants on the first day of the program (Tuesday, August 7th, 2018) and on the last day of the program (Tuesday, August 4th, 2020). Results will

be delivered to the health education specialist for recording and to examine and compare trends in the aforementioned biomarkers from the beginning and end of the program.

It is expected that at least 25% of participants will have statistically significant improvements in their hemoglobin A1C levels, blood glucose levels, total cholesterol, LDL cholesterol, and HDL cholesterol by the end of the two-year program.

- **Objective 2.** Class attendees will receive copies of their blood panels to show the before and after effects of participating in St. Mary's Supper Club.

It is expected that there will be significant improvements in all aforementioned biomarkers under objective one due to increases in consumption of fruits and vegetables and decreases in consumption of added sugars and saturated fats. Additionally, adherence to the USDA 2015-2020 Dietary Guidelines (United States Department of Health and Human Services and United States Department of Agriculture, 2015) will improve hemoglobin A1C, blood glucose levels, total cholesterol, HDL and LDL cholesterol levels of participants. The hemoglobin A1C test is a standardized, valid, and reliable laboratory test that averages a person's blood sugar for the past three months (National Institute of Diabetes and Digestive and Kidney Diseases, 2014). Total cholesterol levels, HDL, and LDL cholesterol levels have been correlated with heart disease and stroke in patients with type 2 diabetes and are thus a good indicator if a person is adequately managing their type 2 diabetes (Almekinder, 2017). Through testing blood glucose levels, a direct and gold standard measure of glucose in the blood along with hemoglobin A1C, the diabetes educator, health education specialist, and phlebotomist will be able to compare what participants' blood glucose levels were at the point of time the blood draw was taken to a three month average of a participant's blood glucose levels (National Institute of Diabetes and Digestive and Kidney Diseases, 2016).

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