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Diabetes Prevention Program

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Benchmark Study

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Executive Summary

Benchmark Study

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Executive Summary

The prevalence of diabetes in Texas has increased 40 percent over the last decade and will continue to rise as of 2019. New onset diabetes, chronic, and children with diabetes has

significant rise in hospitalization rates. COVID and its restraints of limiting physical activity, restrictions of gyms and sedentary lifestyles. Chronic diabetics who were frequent flyer hospitalizations rates increase due to poor social support, mental health and stressors increased during COVID also. This diabetes prevention program that consists of 16wks for new and current diabetics would decrease complications of diabetes such as DKA, retinopathy, nerve pain, chronic pain, AMS, amputations, increase patients' confidence, improve mobility, lose weight, decrease blood sugar, blood sugar, cholesterol and foster independence and control over one's life. This program supports the organizations mission "Making communities healthier" and "Ensuring fiscal responsibilities".

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1. Rationale for the Project

New and chronic diabetics frequently come to the ER for symptoms and complications of diabetes than can 90 percent of the time are preventable. When these patients are admitted we overload them with information regarding diabetics and nutrition. Far too often at discharge the patient has forgotten most of the information wither its verbal or material given; these patients are going back home to their same lifestyle. The diabetes prevention program is needed to educate our communities and take ownership of our own health. Decreasing diabetes with more control of symptoms will positively decrease the financial strain for the patient, the economy, and the organization.

2. Literature Discussion to Support Project

In several literature reviews many articles and studies discussed my PICO question: In Adults with Type II Diabetes (P), how does healthy eating (I) compared with taking Metformin (C) affect Hgb AlC levels (O) within a 3-month period. (T). the articles collected support the diabetes prevention program outcomes, increased physical activity, weight loss, decreased HGb A1C, cholesterol results from increased lifestyle intervention compared to metformin. We included 32 randomized controlled trials comprising 43,669 patients and 14 interventions in the meta-analysis. Both lifestyle modifications and anti-diabetic medications improved physical conditions, including weight loss, blood glucose, and blood pressure. Network meta-analysis suggested that the progression of diabetes could be delayed to varying degrees by lifestyle and pharmacological interventions. (Sheng et al., 2019). Another article supports how the diabetes prevention program effects the yearly cost, such as median incremental cost-effectiveness ratio (ICER), measured in cost per quality-adjusted life year (QALY), Both lifestyle and metformin interventions in high-risk individuals were cost-effective from a health care system or a societal perspective, with median ICERs of $12,510/QALY and $17,089/QALY, respectively, compared with no intervention. Among lifestyle interventions, those that followed a Diabetes Prevention Program (DPP) curriculum had a median ICER of $6,212/QALY, while those that did not follow a DPP curriculum had a median ICER of $13,228/QALY. (Zhou et al., 2020)

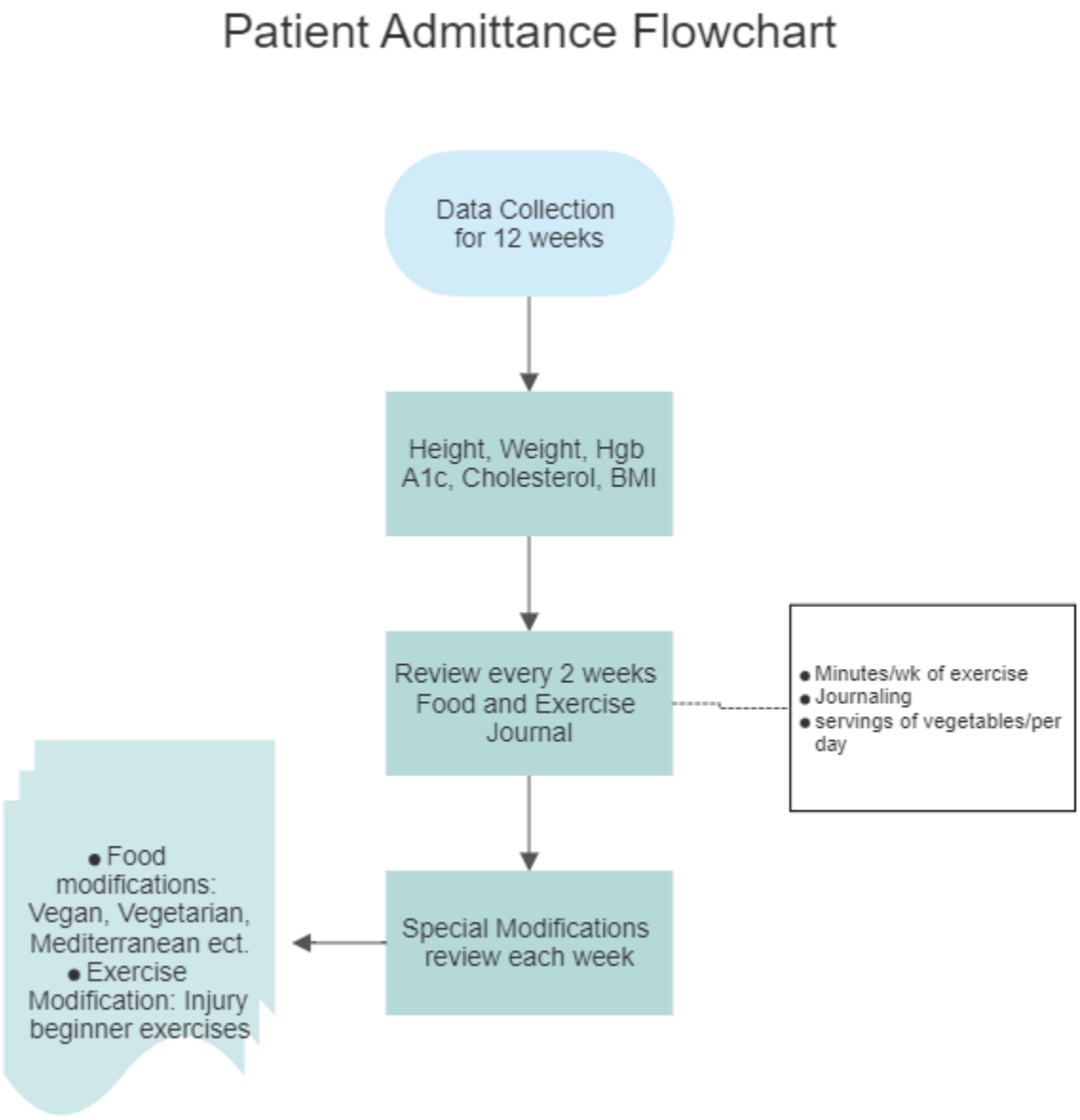
3. Project Stakeholders

The stakeholders involved Directly consist of the CEO, CNO, Physician director. Indirectly involved would be Dietician, two Nurses, Quality/Risk manager, fitness instructor and the patients involved would be directly affected by the program.

4. Evaluation Design

My plan is to first, start with the collected data such as glucose, ALC, height, weight, and BMI. Then repeat the data again around 4, 8, and 12th week to observe for changes over time. Secondly, reviewing logs of food and exercise journals which determines if the patient is moving in more positive or negative direction. Lastly, each 4th week period will be evaluated to check for compliance of the experiment, such as anyone needing additional assistance to keep on track such as positive affirmations, additional time with fitness instructor on exercise modifications, or assistance from dietician if different ideas of food choices that could be needed and making sure progress is going in the right direction.

5. Timetable/Flowchart



6. Data Collection Methods

I went to PubMed where I searched each key term from my PICOT separately to see how many hits I could get from each keyword and/or suggested keywords. Instead of typing each keyword that I previous searched I combined the search numbers to make sure all my words were spelled and placed appropriately so that I would not miss any articles. From search #22, I

yielded 125 articles from there I put some filters in to find a Systematic review or meta-analysis article and 10 years for the time frame. This process then yielded about 18 articles. The first few pages I did not find an article that specified what I was looking for so, I took the Systematic review filter off and then I found my article. I did the same process for the Randomized control trials, which was easier because I already had my search words and didn't have to change anything. I did not yield much so, I added the randomized control trial and the search #23 yielded me 18 articles which were not what I was looking for. Looking at my Intervention question, I need to add metformin. search #28 yielded me 78 articles and it was easily found from there. The qualitative study Article was different because it was not intervention but meaning. I decided to go to CINAHL due to needing to use another search engine; I typed in all my key words and "suggested use" words came up for me to yield good articles. I then combined all the key words and suggested words. Still did not find an article. There were no filters available to use. I incorporated the help of Michael Skinner; Library professional to assist me in finding the article. We had to search for "Qualitative research or Qualitative study". This search then yielded 144 articles. The article that best matched my PIOT was found in the first 2 pages.

7. Costs/Benefits

According to the CDC the complications listed below outweigh the risk of not having a diabetes prevention program because cost will continue to rise for supplies/procedures and other medical cost compared to paying for prevention program.

The High Cost of Diabetes is listed below.

Diabetes is the most expensive chronic condition in our nation.[15,16]

- $1 out of every $4 in US health care costs is spent on caring for people with diabetes.[15]
- $237 billion‡(c) is spent each year on direct medical costs and another $90 billion‡(c) on reduced productivity.[15]
- The total economic cost of diabetes rose 60% from 2007 to 2017.[15]
- 61% of diabetes costs are for people 65 years or older, which is mainly paid by Medicare.[15]
- 48% to 64% of lifetime medical costs for a person with diabetes are for complications related to diabetes, such as heart disease and stroke.[17]

The benefits of a diabetic prevention program

The average follow-up was 2.8 years. The incidence of diabetes was 11.0, 7.8, and 4.8 cases per 100 person-years in the placebo, metformin, and lifestyle groups, respectively. The lifestyle intervention reduced the incidence by 58 percent (95 percent confidence interval, 48 to 66 percent) and metformin by 31 percent (95 percent confidence interval, 17 to 43 percent), as compared with placebo; the lifestyle intervention was significantly more effective than metformin. (Knowler et al., 2002)

- Effective blood sugar management can reduce the risk of eye disease, kidney disease, and nerve disease by 40%.[9]

- Blood pressure management can reduce the risk of heart disease and stroke by 33% to 50%.[10] Improved cholesterol levels can reduce cardiovascular complications by 20% to 50%.[11]
- Regular eye exams and timely treatment could prevent up to 90% of diabetes-related blindness.[12]
- Health care services that include regular foot exams and patient education could prevent up to 85% of diabetes-related amputations.[13]
- Detecting and treating early diabetic kidney disease by using kidney protective medicines that lower blood pressure can reduce decline in kidney function by 33% to 37%.[14].

Physician **Dietician** **Fitness coach**	**$100.00/hr** **$31.00/hr** **$18.00/hr**
Printing paper- 500 sheets	**$4.17/500 sheets**
Food- 15 people	**$100.00/wk**
Pens- 60 ct/box	**$6.38/box**
Eatery: **Plates: 100ct** **Spoons/Forks/Knives: 192 ct** **Napkins: 250 ct**	**$4.24/ct** **$7.98/ct** **$1.48/ct**
Total cost for 12 wk period	**$3,228.17**

8. Conclusions/Recommendations

The intervention for the Diabetes Prevention Program was not able to implement due to COVID-19 strictions and priority of nursing shortage. I believe soon this program will be initiated and will be a great assist to the organization.

Hopefully soon the program will be implemented and with patience and time the hospital will notice a decrease in diabetic related readmissions. As a future MSN I would like to see more evidence-based practice used in my workplace especially by staff nurses' administration and department directors. When the department directors initiate and continually apply, encourage, and supply resources geared toward EBP.

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