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A Need for Change: Patient Education and Diabetic Control

Meredith Sexton

University of Texas at Tyler, msexton2@patriots.uttyler.edu

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A Need for Change: Patient Education and Diabetic Control

Meredith Sexton

Nursing Department, UT Tyler

NURS 5382: Capstone

Dr. Marzilli

December 5, 2021

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Executive Summary

Type II diabetes is a difficult diagnosis for patients to receive. Patients must work through the stigma attached to the diagnosis and understand how it affects their daily lives. It is important for our patients to understand the disease, how to control their blood sugars and how to reduce the risk of preventable complications. This project is based on the following question: “In patients diagnosed with Type II diabetes, how does going to a formal support and education session at least once per week compared to not going to a formal support group affect diabetic control, as measured by patients’ diabetic knowledge within three months?” As we all know, complications from type II diabetes can be minimized with adequate glucose control. Working as an interdisciplinary team, implementing an evidence-based project into practice will lead to a decrease in preventable hospitalizations, improved quality of life for our patients, and a decrease in hospital expenditures.

Currently, our patients receive minimal support when they are diagnosed with type II diabetes. They receive one visit from the diabetic educator and follow up information for their primary care provider. I am proposing that we provide our patients with continued support and education through the implementation of weekly education and support groups. These groups will be conducted by our diabetic educator, with the support of the project team. The team will consist of charge and floor nurses, doctors, and patient care providers, as well as the financial officer and hospital administration. The complications from diabetes are preventable and we must act now to provide our patients with the best tools and knowledge to maintain a high quality of life.

A Need for Change: Patient Education and Diabetic Control

Rationale for Implementation of Education and Support Groups

Type II diabetes affects people from all age groups and backgrounds. Our facility sees many patients that are admitted for complications related to diabetes, as well as having patients admitted for unrelated problems, but that have uncontrolled diabetes. An estimated 30.3 million Americans have diabetes (National Institute of Health [NIH], 2020). Uncontrolled diabetes can lead to severe complications, including, but not limited to kidney disease, eye disorders and heart disease (NIH, 2020). Identifying and implementing measures to help patients control their blood sugars can minimize the economic impact of complications from diabetes and help to improve patients' quality of life (American Diabetic Association [ADA], 2018). Determining factors that lead to effective control of diabetes is complex and multifactorial. Some factors found to be beneficial to successful educational programs include providing social support for participants and frequent contact with program coordinators, in addition to bringing awareness to modifiable risk factors for complications (Maula et al., 2021).

Review of Literature

Support for the use of group educational programs can be beneficial throughout many different aspects of health care delivery (Cutler, 2018; Hazavehei et al., 2018). A case control study with 442 participants found that educational sessions improve diabetic knowledge and adherence to diabetic medication regimens (Mohd et al., 2016). Three separate meta-analyses found that group education programs are effective interventions that lead to improvements in blood glucose (Ellis et al., 2004; Odgers-Jewel et al., 2017a; Steinbeck et al., 2012). In a meta-analysis that looked at randomized control trials between 1990-2000, it was found that face-to-face and group education sessions resulted in better glycemic control (Ellis et al., 2004). In another meta-analysis, Odgers-Jewel et al. (2017a) found that group education resulted in increased knowledge and better glycemic control, when compared to those that did not attend such education sessions. Steinbeck et al. (2012) performed a systemic review on a total of 21 publications. From this review, it was found that glycemic control was improved in those individuals that attended group education (Steinbeck et al., 2012).

Group education provides participants with the knowledge and support needed to help control their diabetes (Odgers-Jewell et al., 2017b). Catapan (2021) conducted a systemic review in which they identified themes in patient values. They found that patients desire to have an increase in psychosocial support, continued support from primary care providers, and active support from friends and families (Catapan et al., 2021). Researchers and policy makers need to consider patient preferences and values when designing group support and education programs (Sperl-Hillen et al., 2011). Group programs are favored by patients (Odgers- Jewell et at., 2017b). A process evaluation of a group education program that focused on patient-centered education, found that patients that attended the program had improved health outcomes, as measured by weight and body mass index (Odgers-Jewell et al., 2017b). Adolfsson et al. (2008) conducted a qualitative study in which they conducted focus groups with participants that attended a group education and empowerment group. The attendees had a better understanding of diabetes and the interaction between physical activity and diet (Adolfsson et al., 2008). Additionally, face-to-face interactions have led to increased knowledge of diabetes, as well as better glycemic control (Ellis et al., 2004; Odgers-Jewel et al., 2017a). When compared to individual education session, group education is more effective, as measured changes in A1c, body mass index, and HDLs (Merakou et al., 2015). Reductions in A1c, body weight, and blood pressure were also found to be correlated with attendance of education and support groups in a gap analysis conducted by Litchman et al. (2020).

Stakeholders

Hospitals are the ideal site to implement change and offer group education and support to patients with type II diabetes. Stakeholders in this project include patients, patients' support members (family, friends, etc.) hospital financial officer, diabetic educators, healthcare providers, nursing administration and nursing staff. Interprofessional involvement between these various stakeholders will be essential to the success of the education program. Nursing administration and nursing leaders will work with healthcare providers to identify patients that would benefit from the program. The diabetic educator will work with both providers and nursing staff to determine what resources are already available for the implementation of the program. Nursing administration will work with the financial officer to look at the

cost-benefit analysis of having such a program. Data and permission to move forward with the project would be presented to the hospital's chief nursing officer.

Plan for Implementation

Step One: Gathering a Team

The project implementation team will consist of no less than one person from nursing administration (a nursing floor director), a charge nurse and / or a floor nurse. Input from nursing staff will guide the project in identifying patients that would benefit from this program and will be instrumental in ensuring patients receive the information regarding the education and support groups. The hospital's diabetic educator will be on the team as well. This will provide the team with a person knowledgeable of the curriculum, effective education delivery methods, and can assist in recruiting patients. A hospitalist will be on the team as well. The hospitalist will provide the team with another resource to inform patients of the program, identify patients, as well as add valuable insights into barriers patient's state to controlling blood sugar. Together this team will be able to implement a program that is based on patient preferences and values, as well as hospital goals for improving patient outcomes.

To recruit team members, there will be two recruitment meetings in the hospital meeting room. All nursing administration, charge nurses, floor nurses, as well as the diabetic educator and hospitalists will be invited to attend the recruitment meeting. These meetings will take place during week one of the planning process and last about thirty minutes. One meeting will be in the morning (9:00 am) and one in the evening (6:00 pm) so that both day and night shift workers can attend. In addition, a summary of the meeting will be provided to those that are unable to attend. During the meeting, the team leader will discuss the background and significance of uncontrolled blood sugars, the data from the literature review that supports the use of group education, and the benefits to the patient and hospital in reducing complications of uncontrolled blood sugars. After each meeting, the team leader will request volunteer team members. If after both meetings, the team leader does not have the needed team members, potential members will be independently solicited to participate to ensure an adequate representation of team members.

Step Two: Securing a Location and Materials

After the team leader has created the team, the team leader will secure a meeting location for the education and support groups to take place. The meetings will take place in the hospital's education room. These can be reserved by speaking with hospital administration. A team member will reserve the meeting room during week one of the planning phase to ensure space is available well in advance. This team member will reserve the rooms for every Tuesday and Thursday from 6:00pm-7:00pm. In addition to securing the meeting location, materials for the education session will need to be collected as well. The same team member will ensure that the meeting room has tables, chairs, and a working projector. These materials can be requested at the time the meeting room is reserved. The diabetic educator will ensure that education material is prepared for each meeting session. The diabetic educator will be tasked with creating the curriculum for each session. Each session will be based off the input from patients, hospital team members (nurses and hospitalists), as well as information the diabetic coordinator knows to be pertinent to patients and their families.

Step Three: Identifying and Recruiting Participants

Potential participants will be identified using patient diagnosis of type II diabetes. In order to identify such patients, the team member will ask a member of the hospital's data analysis department to run a report of all admitted patients with type II diabetes. All patients with type II diabetes will be identified as potential participants, not just those admitted for complications related to diabetes. During week two, a team member will identify all currently admitted patients with a diagnoses of type II diabetes. From this list, the team member will recruit those that have an anticipated discharge within the next week. Each potential participant will be individually recruited by a team member. A team member will visit the patient's room and give the patient an overview of the project, participant expectations, and highlight the benefits of participating. Prior to discharge, each patient's nurse and hospitalist will also discuss the importance of controlling blood sugars and inform them of the program. This will help to reinforce not only the importance of controlling blood sugars, but also ensure they understand the program and the additional resource the hospital is offering to them.

One of the team members will be tasked with maintaining a participant list. This list will contain contact information for each person willing to participate in the program. At the end of week two, each participant will be contacted via email, text, or phone call, depending on patient preferences. Contact preferences will be noted during recruitment that took place earlier in the week. Participants will be informed of the program's start date (Tuesday, Week 3), what to expect at each session, and informed that a family or friend is welcome to join them at each session. By the end of week two, the team will have the meeting room secured, participants identified and contacted, and ready to start the sessions by week three.

Step Four: Education and Support Group

Each participant will commit to attending one session per week and can decide whether Tuesday and Thursday work better. They do not have to commit to the same day every week, as long as they understand that the program is designed for them to attend once per week. Education and support group meetings will start on week three. They will be held on Tuesday and Thursday evenings at 6 p.m. Each session will last about an hour. During each session, the diabetic educator will provide patients with a brief lesson on diabetes control. Topics to discuss during these meetings will be diet, exercise, barriers to control, complications from uncontrolled diabetes, and benefits of controlling blood sugar. Participants will be encouraged to bring a family or friend with them to each session to encourage support and accountability outside of the group environment. After the diabetic coordinator presents the educational material, participants will have the opportunity to ask questions, provide insights into their experiences, and voice any concerns they have regarding the topic. In addition, family members and friends will have the opportunity to discuss how the disease affects the family, advice, and barriers to control, and provide words of encouragement to participants. Each session will promote self-care, highlight successes, and provide patients with encouragement. Maula et al. (2021) identified providing support, frequent contact with program coordinators and bringing awareness to modifiable risk factors as beneficial aspects of an educational program, all of which are included in this plan.

Timetable for Project Implementation

Implementation of this EBP change will be done systematically in phases. Phase one involves presenting information to hospital administration to highlight the need for change. Data will be presented that synthesizes the hospital's current admission rates and costs with respect to patients with diabetes. During phase one, current hospital staff and stakeholders will be involved in the project and invested in bringing about change to the organization. An important task in phase one will be to ensure that staff understand the need for change and an environment conducive to implementation of EBP is created (Rodgers et al., 2019). Phase two will involve identifying participants, securing resources needed for the classroom education and developing the curriculum. During this phase, patient preferences will be assessed to determine which days and locations work best for patients. Classes will last one hour and be held weekly. Phase three of the implementation plan hosting the classes. Phase four will be program evaluation. Below is the specific timeline for the implementation plan: (See Appendix A for visual)

- Phase One: Week 1. Share the vision for change (Rodgers et al., 2019). Present data to the chief nursing officer, diabetic coordinator, and other hospital stakeholders. Gather a team, recruit team members, secure location and materials.
- Phase Two: Week 2. Work with the diabetic coordinator to identify and recruit participants.
- Phase Three: Weeks 3-15. Host hour long, weekly classes for the patients to attend. Conduct pre and posttests, program evaluation, and satisfaction surveys during week 15.
- Phase Four: Week 16. Dissemination and final meeting to discuss programs success and future.

Data Collection

The success of the program will be measured by data collected on patients' diabetic knowledge before and after attending the weekly classes. The data will be analyzed to determine if there is a statistically significant increase in patient's diabetic knowledge. Surveys will also be conducted on participant satisfaction with the classes. The overall process of change will be measured by the team's

ability to motivate staff, recruit participants, and increase participants knowledge on diabetes and glucose control. Changing and improving patient outcomes with respect to diabetes is very important within our facility. If this proposed change is unable to be implemented, the team will work to change the culture within the hospital to promote change driven by EBP. The team will develop a presentation for hospital staff that demonstrates the need to change the way we educate our diabetic patients. In addition, the team can offer to have pre-recorded education session available for patients to watch on their own time.

Evaluation Plan

To evaluate the outcomes of this project, data will be collected and analyzed from the patients' responses to administered tests and surveys. The evaluation plan for this project will be based on data from a test that patients will complete at the first session and again at the final session.

During the first week of implementation, the diabetic educator will have created a test to administer to the patients. The test will determine the patient's knowledge over diabetes, glycemic control, and knowledge regarding possible complications of uncontrolled diabetes. The tests will be administered to patients during the first educational / support group session which is to take place in week two. The completed tests will be given to a team member who will input the scores into an excel file. Each patient will have a unique identifier to track them to their score, basic demographic data, and as well as a way to track how many sessions they complete. At the final class, another test will be administered and inputted into the excel file. Changes in the patients' diabetic knowledge will be measured and used as a tool to determine the effectiveness of the program.

In addition to the pre and post education tests, data on patient satisfaction with respect to the classes will be collected. This survey will allow the team to consider the patient's values and preferences when looking at continuing the program. This survey will have been created by one of the team members during the first few weeks of the program start date and will be administered during the final week of classes. The data from this survey will be inputted into an excel file so that the data can be consolidated, and themes identified. This will allow me to evaluate the program with respect to accessibility, time

preference, delivery method, as well as allow me to take suggestions from patients on recommended changes.

Steps to Successful Program Evaluation

The successful evaluation of this project is based on the active participation of the team members, stake holders, and patients. The team members for this project included volunteers from floor nurses, diabetic educators, hospital providers, and administrative staff. The stakeholders for this project are the patients, hospital administration, including the chief financial officer and hospital board members, nursing staff and administration, and providers. Without the input from all stakeholders, this project will not be as successful.

Step One: Defining Outcomes

The first step in this evaluation plan is to define the variables we will be using to measure patient outcomes. Alexandrov et al. (2019) states that in the healthcare setting, outcomes are what the patient experienced by the patient. For this project, the outcome variable the team will be tracking is changes in diabetic knowledge. To measure this, each participant will have a pre and post education test score. This test score will be used as the defining measurement for the variable “diabetic knowledge.” For this project, the use of Excel will be used to analyze the data as it is a tool that is readily available at no cost.

Step Two: Analyzing Pre / Post Test Scores

The second step in the evaluation plan is take the information from the pre and post educational / support group tests and determine if there were increases in patients’ knowledge. Average test scores from the initial test will be compared with those of the second test. This data will be used to capture the effects of the sessions. Data will be collected at both the individual level and group level. That is, we will determine which patients had increases or decreases in diabetic knowledge, as well as changes in the group’s average score from the first and final session. By keeping the scores separate, the team can determine if there is a correlation between number of sessions attended and final scores.

Step Three: Interpreting the Data

Data from the above-mentioned outcome variables will be interpreted by looking at changes in average test scores. This is an easy and straight forward way to determine if the project had a positive effect on diabetic knowledge. Since this project design plan is based on volunteer nursing staff, the ability to access and run more data analysis is very limited. For this project, increases in average test scores will be interpreted as a positive program outcome and that the program was successful. After the completion of a pilot program, further research could be used to look into the statistical significance of these results, as well as look into more detail other correlations in changes in test scores. For example, does going to more classes increase your score significantly more? Does having a support member attend the classes with you increase your knowledge? As well as determine if there is a correlation with respect to average test scores and education, age, and sex.

Step Four: Analyzing Patient Satisfaction Surveys

Patient satisfaction surveys will be administered at the final session. They surveys will have been created by a team member. The surveys will capture patient overall satisfaction using a Likert scale that addresses satisfaction with the content of the sessions, delivery method, location, and time of the session. In addition to this, the participants will have the opportunity to write in any recommendations they have for future sessions, additional material they would like covered, location suggestions, etc. These surveys will be analyzed using overall rating for each topic on a scale of 1-5, with one being completely unsatisfied and five be completely satisfied. The patient recommendations will be typed up and common themes will be identified. This will allow use to determine if there is change that is common throughout the participants and we can change future session to incorporate such suggestions.

Final step: Statistical Analysis & Dissemination

The last step in the evaluation plan is to synthesize and disseminate the data gathered. Basic descriptive statistics will be gathered and presented to the stakeholders at the conclusion of the project. This will include descriptive statistics such as the number of participants, sex, average age, average length of time the patients had diabetes, and educational level. The inferential statistics will be presented in a bar

graph that compares average pre and post test scores, as well as percentage of change in test scores. The data from the patient satisfaction surveys will be presented using a bar graph as well. The graph will show patient satisfaction levels with respect to each area the patient rated. In addition, the themes identified in the patient recommendations will be presented in bullet points. This information will be presented to the stakeholders through the final project meeting, emails, and posted in breakrooms throughout the hospital.

Cost / Benefit Discussion

The economic cost of diabetes has been found to be the highest when compared to other chronic conditions (Dieleman et al., 2016). Since diabetes affects so many people and the risk of complications is high, it is important for health care facilities to implement measures to reduce complications. Not determining effective ways to help patients effectively manage blood sugars runs the risk of life altering complications, in addition to costing taxpayers and healthcare facilities financially. We have a duty to our patients and our community to implement change that will positively impact the quality of life our for our patients, as well as decrease the use of hospital resources on preventable admissions. Through the implementation of this project, our facility will reduce expenses in numerous areas. We will reduce the cost to our patients and community by decreasing the number of preventable hospitalizations. Additional resources needed include a diabetic education curriculum, educational material for the patients to take home, computer equipment and projector if the educator needs to present information. Chairs and possibly tables would be needed for the sessions. Costs associated with the implementation of this project will be kept to a minimum. Classroom facilities, chairs, tables, and computer equipment will be requested from the hospital and if they cannot be provided onsite, community resources will be investigated. Payroll for the classroom instructor and curriculum developer will be the only ongoing expenditures for this project. Overtime, the hospital will see a decrease in expenditures on re-admissions and complications from uncontrolled diabetes that the program will be worth the minimal cost. Throughout the implementation of this project, the hospital's diabetic coordinator will be assisting the project leader with the determining classroom location, curriculum, and identification of program participants.

Discussion

The nature of this benchmark study does not leave open the possibility to discuss outcome measures and overall success of the proposed change. Based on the research, it would be expected that providing patients with additional resources and improving their understanding and knowledge of type II diabetes, patients would experience a decrease in complications from the disease, with an improved quality of life. The hospital would see a decline in resources used to treat and care for patients with preventable conditions from diabetes. As we continue to work through the influx of patients and the decrease in nursing staff due to Covid, we need to find ways to limit the strain on limited resources and staff. Through the implementation of this proposed evidence-based change, our hospital will decrease the strain on resources, while improving patient health outcomes.

Concluding Recommendations

By implementing the proposed educational and support groups, our facility can improve patient outcomes and enhance hospital expenses and resource allocation. I recommend that we work to implement this project. As the implementation of the project advances beyond the initial 15-week period, I recommend that the facility expand on data collection and evaluation of program outcomes. The current evaluation plan is based solely on changes in patient knowledge and patient satisfaction. Stronger data analysis would help to determine the extent of the program's success. Some data that would help our facility improve the evaluation of the program would be collection of patient labs (fasting blood sugar, A1c, lipids), blood pressure and weight and analyzing any changes pre and post attending the educational and support groups. In addition, collecting data from patients that chose to attend the program and those that do not could allow the facility to determine if there are any statistically significant differences in number and extent of complications and hospital stays. As has been previously discussed, a diagnosis of type II diabetes has the potential to alter the health outcomes and quality of life for our patients. These negative consequences can be negated by improving patients' understanding and knowledge of the disease. We have an obligation to our community and patients to improve patient outcomes.

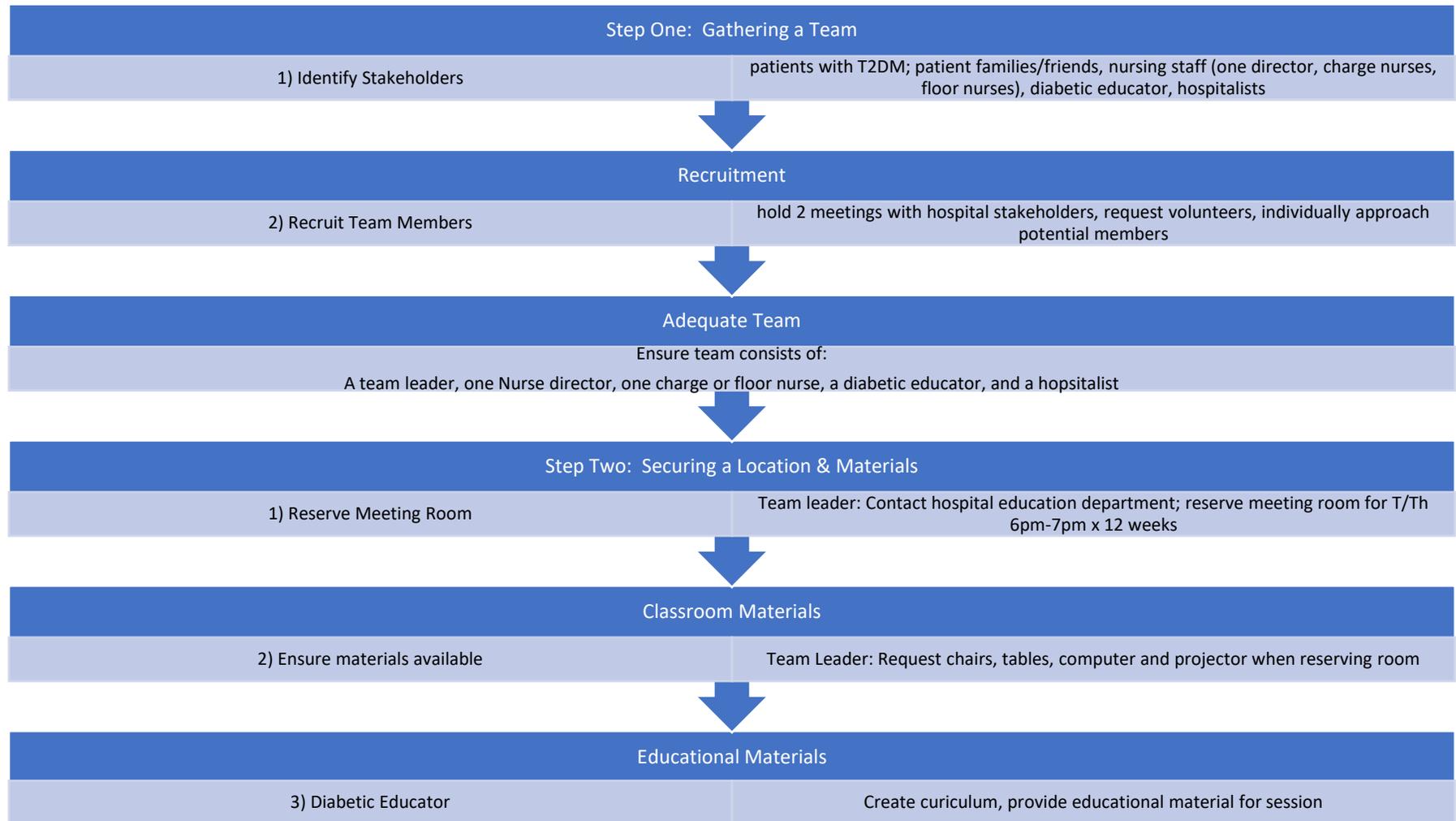
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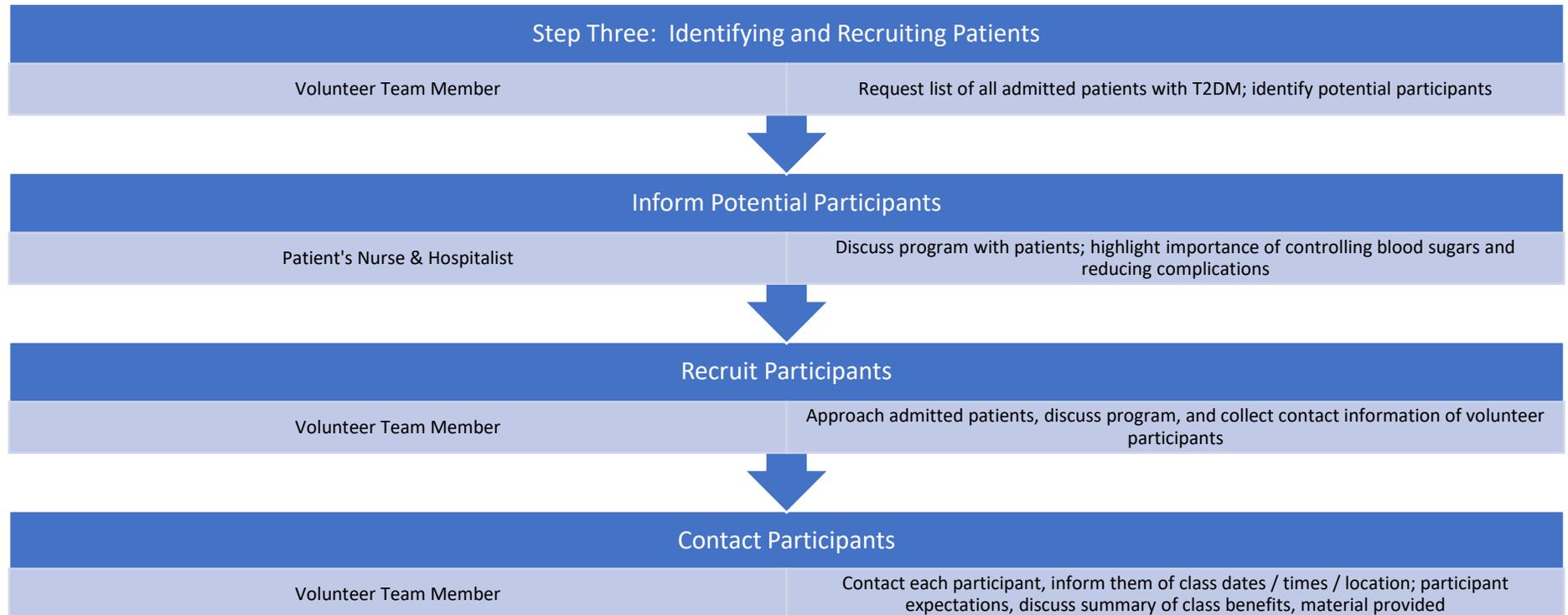
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Appendix A:
Plan Flowsheet

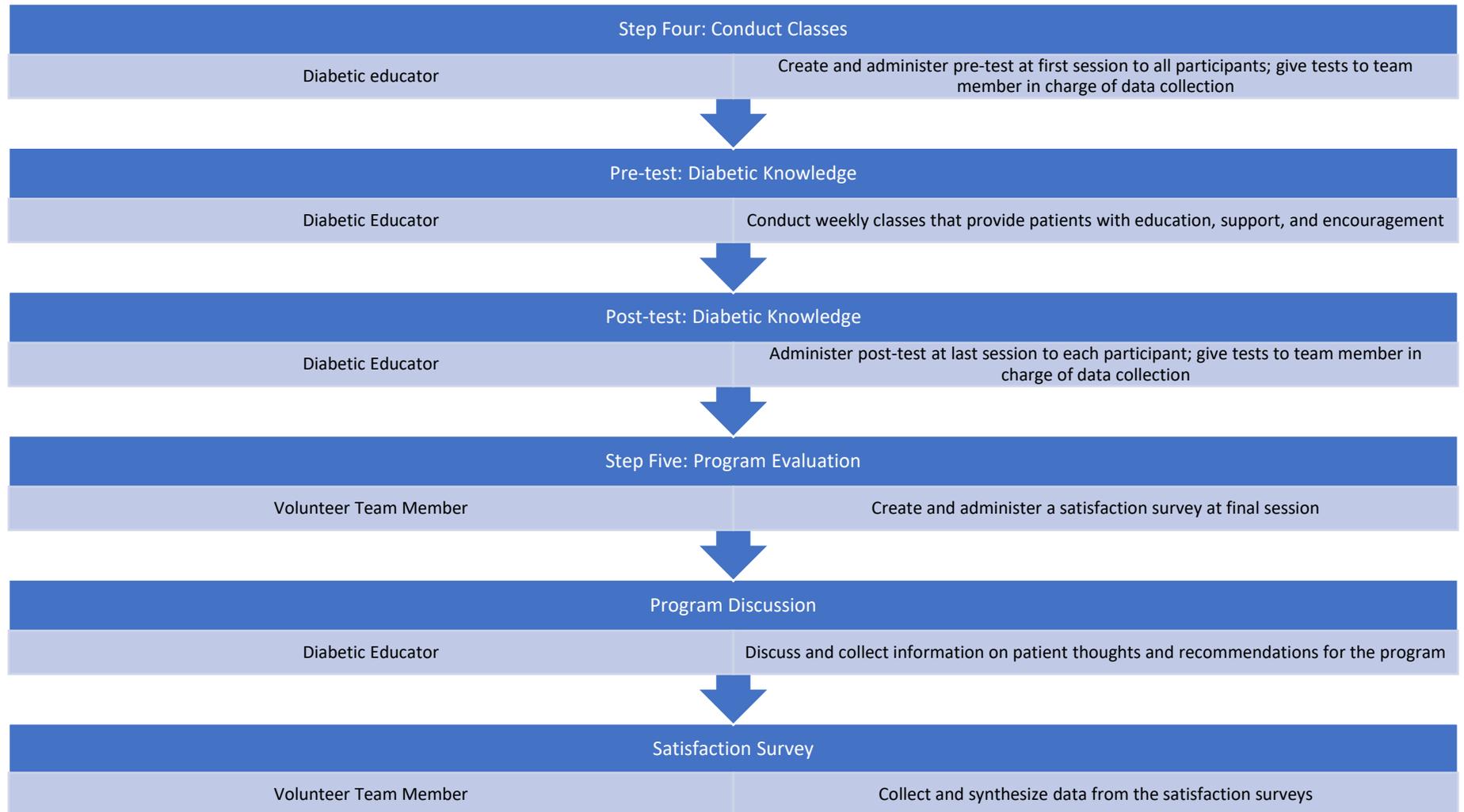
Week One



Week Two



Weeks Three – Fifteen



Week Sixteen

