

INCREASING AWARENESS AND REFERRAL OF
DIABETES PREVENTION PROGRAM
IN THE HOSPITAL SETTING

by

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DEDICATION

I dedicate this project work to my dear mother and late father for their unconditional love and support; my husband and children for their support and being understanding when I missed their concerts or did not prepare their favorite holiday/birthday dishes; and my siblings who take care of our parents and support me in my endeavor of pursuing a Doctorate of Nursing Practice degree.

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ABSTRACT

Background: Type 2 diabetes is a great burden on the US health care system. The increase in prevalence makes the prevention of diabetes an urgent public health priority. The Diabetes Prevention Program (DPP), an intensified lifestyle modification program established by the CDC, has the capacity to reduce overall diabetes risk by 58% in people considered high risk for the disease. However, despite its encouraging results in diabetes prevention, the DPP continues to be underutilized.

Purpose and Methods: The overall goal of this DNP scholarly project, conducted in a hospital setting, was to increase provider awareness of the DPP and increase referrals to the program. Three key methods were used to carry out the project. First, an educational presentation about the DPP was disseminated to providers to increase their awareness and knowledge of the program. The second involved embedding a referral pathway from a local hospital (project site) to the local DPP. The third was to build a clinical–community linkage (CCL) among the local hospital, the local DPP, and primary care providers (PCP). The goal of the latter was to enhance care coordination and increase PCP awareness of the DPP.

Results: The results demonstrated that educational presentations did increase the providers' awareness and knowledge of DPP. During the implementation period, there were 35 DPP-eligible patients. Yet, the majority of these patients were missed due to a lack of time from the volunteer staff. The referral rate did not meet the project's goal. However, most of the patients approached refused to enroll in the DPP due to lack of awareness of their high diabetes risk. Nonetheless, the implications of this project were valuable for the local hospital as it highlighted the need to better address this national public health issue.

CHAPTER ONE

DESCRIPTION OF THE PROBLEM

Introduction

Diabetes is a chronic disease with complications leading to coronary artery disease, stroke, kidney failure, blindness, and lower-limb amputations (World Health Organization [WHO], 2021). It is one of the attributed non-communicable diseases, causing over 36 million deaths annually worldwide (WHO, 2013). The global burden of diabetes has been trending up dramatically since 1990, with a global prevalence of 476 million people diagnosed in 2017, projected to be 570.9 million in 2025 (Lin et al., 2020). Obesity, diet, smoking, and sedentary lifestyle accounted for the most deaths and disability-adjusted life-years of diabetes (Lin et al., 2020).

In 2018, it was estimated that in the United States, 13.0% of adults 18 years of age or older had diabetes, with 90–95% having type 2 diabetes (T2DM). Of this age group, 24.1% of the US population were unaware of having the disease. In 2017, the estimated direct and indirect costs of diagnosed diabetes were \$327 billion in the US and \$820 million in Montana (American Diabetes Association [ADA], 2020; Center of Disease and Prevention [CDC], 2020). The detrimental effects of diabetes and its impact on national health and the lives of individuals call for a better solution for its prevention.

Background

Prediabetes is defined as glucose values not meeting the criteria for diabetes and yet too high to be considered as normal-fasting plasma glucose: 100–125 mg/dL (impaired fasting glucose, IFG), 2-h plasma glucose of 75g oral glucose tolerance test (OGTT) between 140 and 199 mg/dL (impaired glucose tolerance, IGT), or HbA1C 5.7-6.4% (ADA, 2019). In 2018, about 34.5% of US adults aged 18 or older had prediabetes (CDC, 2020). The economic burden from prediabetes was estimated to be 43.4 billion in 2017 (Dall et al., 2019). In Montana, 7.4% of adults were diagnosed with prediabetes in 2017, and it was estimated that 282,000 people or 34.7% of adults (1 in 3 adults) in Montana are affected by prediabetes (Dall et al., 2019; Montana Department of Public Health and Human Services [DPHHS], 2020). Without intervention, 15–30% of people with prediabetes will likely progress to diabetes within five years (Montana DPHHS, 2021).

Type 2 diabetes is notorious for its vascular dysfunction contributing to complications such as stroke, kidney failure, retinopathy, amputation, or heart attack. Vascular dysfunction starts before overt diabetes sets in. Sørensen et al. (2016) found that the state of hyperglycemia impaired the microvascular function in the skin and retina, supporting that cardiovascular disease related to T2DM occurs before it is diagnosed. Prediabetes also has destructive consequences on the kidneys of patients with this condition and serves as a reliable predictor for chronic kidney diseases (Kim et al., 2019; Markus et al., 2018).

Also concerning is that prediabetes has been associated with vascular dysfunction (Lawal et al., 2020; Tabák et al., 2012; Zand et al., 2018). Moreover, the AusDiab survey suggests that cardiovascular disease prevention is warranted in patients with prediabetes because of its

significant association with mortality related to vascular dysfunction (Barr et al., 2007). The end-organ damage could start before diabetes is diagnosed. Hence, it is imperative to address T2DM in the states of prediabetes, hyperglycemia, or IGT.

Lifestyle modification (LSM) versus medication in preventing diabetes has drawn broad interest. Yuen et al. (as cited in Aginga, 2021) found that both LSM and metformin were effective in preventing T2DM in patients with IGT. When comparing LSM with medication, Gillies et al. (2007) concluded that LSM was as good as pharmacological treatment in preventing the progression of T2DM in individuals with IGT. In contrast, a Cochran systematic review stated that metformin alone did not reduce or delay the risk of T2DM when compared with intensive diet and exercise (Madsen et al., 2019). The key difference here is the risk reduction with LSM as unhealthy lifestyles contribute to most chronic diseases (Egger & Dixon, 2014). It is not surprising that the effect of medication in preventing T2DM was short-lived (Haw et al., 2017). In addition, it is worth noting that only diet plus exercise prevented or delayed T2DM in individuals with IGT (Hemmingsen et al., 2017). While using medications to treat prediabetes might be more beneficial in some circumstances, changing lifestyles should be considered to manage prediabetes or IGT as this is the most likely the root cause of T2DM.

Statement of the Problem

Many studies found the progression from prediabetes to overt diabetes could be reversed or delayed by intensified lifestyle modification that focused on increasing physical activity, weight loss, and diet changes (Aginga, 2021; Balk et al., 2015; Hemmingsen et al., 2017; Knowler et al., 2002). A randomized controlled trial done by Knowler et al. (2002) found that an intense lifestyle modification program could reduce the risk of developing T2DM by 58% and

71% among adults aged 18 years or older and aged 60 years and older, respectively. As a result, the National Diabetes Prevention Program (DPP) was established in 2010 to address the continued increasing rates of prediabetes and T2DM (CDC, 2021e). However, years after its establishment, the utilization of the DPP has not been optimal (Mainous et al., 2016; Schmittiel et al., 2014). The recent National Health Interview Survey (2016–2017) showed that only 4.9% of adults among 14.6 million diagnosed with prediabetes were referred to an LSM program like the DPP. Additionally, only 0.4% of adults among 53.5 million with an elevated body mass index (BMI) and without being diagnosed with prediabetes joined a DPP (Ali et al., 2019).

Ackermann and O'Brien (2020) noted that less than 1% of the target population had utilized a DPP-like program. The barriers to utilizing an LSM program are multifactorial. Among people and clinicians, awareness of the program was a key factor (Ali et al., 2019). Lack of awareness of the DPP or efforts to diagnose prediabetes is related to low referral rates and DPP utilization (Ackermann & O'Brien, 2020; Herman et al., 2021; Nhim et al., 2018; Mainous et al., 2016). Similar findings were shown in the 2020 Montana Provider Prediabetes Awareness Survey Result and Next Step, in which only 18% of the providers in Montana were aware of the National DPP, 16% knew how to refer a patient to a DPP, 23% were aware of local organizations offering a DPP, and only 10% referred most of their prediabetic patients to a CDC-recognized DPP. Moreover, while 84% of the providers agreed that screening for prediabetes was a high priority, less than or equal to 30% knew the correct range for HbA1C and fasting blood glucose to diagnose prediabetes (Montana DPHHS, 2020).

Purpose

The current project site has no referral mechanism with the local DPP. Barriers, as cited in the 2020 Montana Provider Prediabetes Awareness Survey Result and Next Steps, exist in this facility (Montana DPHHS, 2020). Therefore, the primary purpose of the proposed quality improvement (QI) project is to develop a robust DPP referral system at the project site (a hospital in Montana). This will be achieved by increasing awareness of the DPP among clinicians, increasing the referral rate of prediabetes or at-risk patients to the local DPP from the hospital setting, and promoting clinical–community linkages (CCL) among hospitalists, primary care providers (PCPs) whose patients utilize the hospital, and a Missoula DPP. Accordingly, the aims of this QI project are to 1) disseminate information regarding the DPP among the hospitalists at the project site; 2) develop CCL among the project site, the DPP, and the PCPs of the patients referred by the hospitalists; and 3) embed the referral process in the current unit workflow.

The success of this project could enhance the CCL and increase the DPP utilization to address the national health care burden on diabetes. Limitations may apply because a primary care setting is ideal for applying a change to increase referral and utilization of DPPs. Thus, the project tries to bridge the gap in awareness of the DPP and initiate a referral process for eligible patients from a hospital setting that will benefit patients with prediabetes or at high risk for T2DM. If successful, the experience of the project may be disseminated to a similar inpatient setting.

CHAPTER TWO

EXAMINATION OF EVIDENCE

Introduction

The CDC's DPP is a well-established and well-recognized initiative that can have a profound impact on persons at risk for developing diabetes. Unfortunately, it is inconsistently employed across the United States, including in Montana. This chapter intends to describe existing research about the DPP, including the strengths and limitations of its implementation and the implications of this for the proposed practice change project.

Search Methods

Databases such as CINAHL, PubMed, Google Scholar, Joanna Briggs Institute EBP Database, and Cochrane Library were utilized for the literature search. Initially, a search filter was used to limit the search results to English-language articles published from 2016 to 2021. An additional search was performed without limiting the publication date to include classical or foundational pieces in this area of research. Multiple search terms were used to locate the literature, including keywords: diabetes prevention program, facilitate, barriers, prediabetes, awareness, CCL, chronic disease, self-care, self-management, community, integration, microvascular, macrovascular disease, and referral. Once the searches were completed, relevant literature was then reviewed, evaluated, and organized into three themes. These themes are DPP—an LSM intervention, barriers to utilization, and facilitators to utilization.

Themes of Literature Review

Diabetes Prevention Program (DPP)— A lifestyle Modification Intervention

A research-based national DPP was established by the CDC of which the Division of Diabetes Translation funds in 50 states and works collaboratively with the states' health departments to prevent diabetes (CDC, 2021e). The DPP is an LSM CDC-recognized program, entails a year-long patient commitment, and is led by a trained lifestyle coach. The first six months of the program, including 16 weekly and four biweekly one-hour sessions, emphasize healthy diets, increased physical activity, stress management, coping with lifestyle changes, and dealing with how to get back on track when slipping from the lifestyle change plan of action. After that, the following six monthly sessions build on the skills learned with the goal of sustaining the positive changes (CDC, 2021d). The eligibility criteria were as follows: 18 years or older, BMI of 25 or higher (23 or higher for Asian Americans), not diagnosed with diabetes type 1 or type 2 previously, and not being pregnant. In addition to the aforementioned, the individual must also have one of the following: blood test results (HbA1C, or fasting blood glucose (FBG), or two-hour plasma glucose) in the prediabetes range; history of gestational diabetes; or a prediabetes risk test score of five or more (CDC, 2021a). The DPP was founded on research that supports losing 5–7% of body weight as well as 150 minutes of exercise per week, which could cut the risk of developing T2DM up to 58% in adults 18 or older and 71% in adults 60 or older (Knowler et al., 2002).

There is robust evidence, including randomized controlled trials and systemic reviews with meta-analysis, regarding the impact of LSM such as DPP on diabetes prevention in individuals with IGT and or prediabetes (Aginga, 2021; Angermayr et al., 2010; Diabetes

Prevention Program Research Group [DPPRG], 2015; Dunkley et al., 2014; Haw et al., 2017; Madsen et al., 2019; Tuomilehto et al., 2001). Lifestyle modification has been shown to significantly reduce the BMI, FBG, insulin resistance, and waist circumference; achieve better blood pressure control, better cholesterol profile with higher high-density lipoprotein (HDL) and lower total cholesterol; and reduce the incidence of cardiovascular events, vascular dysfunction induced end-organ damage, mortality of the cardiovascular disease, and increase life expectancy (Katula et al., 2013 as cited in Aginga, 2021; Gong et al., 2019; Mudaliar et al., 2016; Rapoport et al., 2021). Even in people with T2DM, the LSM has a significant impact on reducing cardiovascular disease incidence (Angermayr et al., 2010).

Barriers to Utilizing DPP

The DPP lifestyle modification is effective in stopping the progression from prediabetes to diabetes and is the center of self-management in chronic illnesses such as diabetes. To promote behavioral change, the integration of health care infrastructure and community resources could increase the quality of care for chronic illnesses such as prediabetes or diabetes that rely on self-management for effective control (Alexandre et al., 2021). Unfortunately, community programs have difficulty recruiting the target population (Torres, 2015). For people at risk for diabetes, the barriers to receiving referrals for diabetes reduction activities were multifactorial, according to the National Health Interview Survey in 2016 and 2017 (Ali et al., 2019). Some of them are related to the DPP itself, such as lack of access, transportation to DPP sites, and insurance coverage (Mensa-Wilmot et al., 2017; Halley et al., 2020). Patients' own competing priorities, such as health conditions (cancer, arthritis), programs not meeting patients' expectations, and program sessions not meeting the patients' schedule have been listed as

barriers from the patient's perspective (Baucom et al., 2021; Halley et al., 2020). For this project, the literature review of barriers to utilizing DPP focused on care delivery of health care services to meet the health needs of the prediabetes population.

According to the CDC (2020), only 15.3% of 88 million adults with prediabetes were told that they had the condition, and the self-referral to enroll in a DPP was ineffective. The evidence indicates that a referral made from the physician is the prime method for the DPP to recruit the participants. Also noted is that physicians often do not make referrals even when patients meet the DPP eligibility criteria (C. Chase, personal communication, August 27, 2021; C. Chesbro, personal communication, October 5, 2021; Halley et al., 2021; Joachim-Célestin, et al., 2020). It is widely reported that a lack of knowledge or awareness could be the main reason (Ackermann & O'Brien, 2020; Ali et al., 2019; Halley et al., 2021; Mainous et al., 2016; Mensa-Wilmot et al., 2017; Nhim et al., 2018; Tice et al., 2016; Tseng et al., 2019). It is worth noting that there was a positive correlation between providers' awareness of the DPP and the referral rate (Nhim et al., 2018). Coincidentally, the 2020 Montana Provider Prediabetes Awareness Survey Results and Next Steps also showed low awareness of the DPP and a low referral rate among the providers, although the correlation was not reported or studied (Montana DPHHS, 2020).

Lack of knowledge of the DPP and assessing the patient's diabetes risk could miss the opportunity to address the patient's prediabetes. In addition, unfamiliarity with the community resources was found to be a major barrier for providers to make referrals to community-based health programs (Ackerman & O'Brien, 2020; Khan et al., 2020). Furthermore, the lack of a streamlined referral process or policy for the DPP was also a barrier to referring patients to a DPP (Baucom et al., 2021; Mensa-Wilmot et al., 2017). In that regard, electronic health records

have been used to identify eligible patients and facilitate the referral process (Keck et al., 2020; Mensa-Wilmot et al., 2017; Nhim et al., 2021).

Additionally, differences in the perception of prediabetes between patients and clinicians could exist. Roper et al. (2019) found patients were often not made aware of the status of prediabetes, risks related to medical conditions, and necessary behavior changes to address the conditions, while providers thought lack of awareness of prediabetes in their patients posted as a barrier to the DPP. As a lack of motivation from people with lower self-perceived diabetes risk could decrease the patients' engagement with risk reduction activities, clear communication between patients and clinicians should be addressed (Ali et al., 2019; Roper et al., 2019; Tseng et al., 2019).

Furthermore, the bi-directional feedback loop between the clinicians and DPPs can be critical to utilizing DPP (Mensa-Wilmot et al., 2017). The bi-directional feedback loop is the information (e.g., enrollment, completion, or left early of the DPP) flow between the clinical care team and the DPP program to support patients' enrollment and participation, which complements patient-centered care and supports the CCL (American Medical Association [AMA], 2020).

Facilitators to Utilizing DPP

Barriers to utilizing a DPP are multifactorial, and the strategy to overcome the gaps may take multiple steps. Increasing awareness, modifying workflow (Ackermann & O'Brien, 2020; Holliday et al., 2019; Nhim et al., 2018), clinician education, a champion, patient identification (Keck et al., 2020), having a direct referral process built with a local DPP (Tseng et al., 2019), a mechanism to work on a target group such as high-risk patients (Herman et al., 2021; Tabák et al., 2012), physician counseling to motivate patients (Jay et al., 2010; Herman et al., 2021; Post

et al., 2011), involving a multidisciplinary team such as registered nurses (RNs) (Rees & Williams, 2009); bi-directional referral (Nhim et al., 2021), and establishing the CCL (Ackermann 2010; Nhim et al., 2021) have been proved to work for increasing utilization of an LSM program like the DPP.

To facilitate care coordination for a better quality of care, including prediabetes management, researchers advocate building a referral process between clinics and health promotion programs (Elsakr et al., 2019; Halley et al., 2020; Roper et al., 2019). Furthermore, Nhim et al. (2021) defined CCL as a formal partnership between clinical care agencies and community-based organizations engaging in designated roles and procedures related to the care of health conditions or risk factors within a defined patient population. Bridging the structural chasm of care between providers and community resources could contribute to better health outcomes (Etz et al., 2008). Ackerman (2010) successfully employed the integrating framework to set up CCL between clinics and DPP and demonstrated different ways to make the linkages. Later, Nhim et al. (2021) found that CCL facilitated the referral to DPP. Ali et al. (2019) also called for the use of CCL to increase the utilization of DPPs. Others have supported that CCL could improve health outcomes (Battersby et al., 2010; Etz et al., 2008; Fishleder et al., 2018; Torres, 2015). Therefore, establishing CCL would be an important step in promoting DPP referrals.

Besides the CCL, the AMA recommended bi-directional feedback as a way of enhancing the communication loop between the referral providers and the agency that received the referral from the providers (AMA, 2020). Also important in promoting DPP referrals was keeping the providers updated on their patients' progression through the referral process (Mensa-Wilmot et

al., 2018; Nhim et al., 2021). Other studies support that outreach and building communication pathways between clinicians and community resources are steps to overcome referral barriers (Fishleder et al., 2018; Khan et al., 2020; Wilson et al., 2021).

As unfamiliarity with prediabetes diagnosis and community resources could be a barrier to the DPP, increasing awareness, knowledge, and eligibility criteria have been widely supported to increase the utilization of the DPP (Ali et al., 2019; Ely et al., 2017; Herman et al., 2021; Tice et al., 2016). Moreover, using education as a means to promote awareness of DPP has been documented, and educational presentation was thought to be helpful (Holliday et al., 2019; Keck et al., 2020; Kelley, 2016; Tseng et al., 2019).

The enrollment and retention of participants are two of the key issues encountered by DPPs in every state (Mensa-Wilmot et al., 2018). The literature has supported that patients' awareness of the status of prediabetes or IGT could give them a sense of the seriousness and increase their motivation to make changes (Ali et al., 2019; Joachim-Célestin et al., 2020; Rees & Williams, 2009; Roper et al., 2019). Also noted is that the provider's advice is a major facilitator for motivating patients toward making LSM for better diabetes self-management (Alexendre et al., 2021; Jay et al., 2010; Post et al., 2011; Tseng et al., 2019). Additionally, Sheehy et al. (2012) conducted a pilot study using the inpatient setting as a venue for diabetes screening and impaired fasting glucose. The researchers found that it is feasible to use an inpatient setting to promote diabetes prevention with a communication structure informing PCPs of the results. Furthermore, having a referring mechanism in place and strategies to strengthen the referring process would likely promote the referrals (Chambers et al., 2019; Holliday et al., 2019; Mensa-Wilmot et al., 2017; Tice et al., 2016; Tseng et al., 2019).

Summary

It is estimated that of the 34.1 million adults in the United States with diabetes, 90–95% have T2DM. Additionally, another 88 million adults are estimated to have prediabetes. Without intervention, 15–30% of those with prediabetes will likely progress to T2DM within five years (Montana DPHHS, 2021). T2DM has major detrimental effects on the health of individuals and poses a significant national burden. Consequently, the prevention of T2DM is imperative. The evidence overwhelmingly supports the importance of intensive LSM programs like the CDC-recognized DPP in preventing or delaying overt diabetes. Unfortunately, the DPP utilization has not been optimal across the United States, including Montana. Thus, this proposed practice change will have a positive impact on reducing patient disease burden and on the financial burden caused by T2DM.

Intended Improvement and Aims of the Project

The evidence is clear that provider knowledge of DPP and familiarity with the eligibility criteria do promote referrals to the DPP. Yet most providers are not aware of the DPP or are uninformed about how to make the referrals. This is concerning because participant enrollment in the DPP is largely driven by providers' referrals. The 2016 and 2017 National Health Interview Survey and 2020 Montana Provider Prediabetes Awareness Survey Results and Next Steps offer insight into this practice gap (Ali et al., 2019; Montana DPHHS, 2020). Also of importance to successful DPP engagement is having the referral mechanism in place, building CCL, and employing a bi-directional feedback loop between clinical settings and community resources with communication that strengthens the care coordination. These partnerships can

lead to improvement in prediabetes self-management skills and, ultimately, improvement in health outcomes.

Intended Practice Change

This project was intended to improve the referral rate of eligible candidates to the local DPP. To achieve this goal, several steps required implementation and included increasing the awareness of the DPP among the hospitalists at the project site and embedding the referral process in the current workflow to link the project site to the local DPP and PCPs.

CHAPTER THREE

SETTING AND METHODS

Introduction

This QI project was intended to increase the providers' knowledge of the CDC's Diabetes Prevention Program and enhance CCL to improve referrals and follow-up for patients in the program. This chapter describes the approach and methods used to carry out this QI project, as well as the guiding conceptual framework and instruments employed.

Conceptual Framework

Donabedian's Quality Framework

The Donabedian model for quality of care was chosen. DesHarnais (2013) stated the model provides a conceptualizing quality framework in broad terms and will make the model easy to apply in different aspects of quality care. This conceptual framework was introduced in 1966 by Avedis Donabedian, defining the quality of care as a reflection of the current medical system's goals and values (Donabedian, 2005). It contains a linear dimension of three aspects of care: structure, process, and outcome (SPO) (Naranjo, & Viswanatha Kaimal, 2011). The structure corresponds to the resources available to deliver health care, such as facilities, equipment, and trained personnel or the physical and organizational features of care settings. The process speaks to the activities related to patients seeking care and clinicians giving care, and it depends on the structures to deliver resources and mechanisms so that interdisciplinary team members can provide patient care activities. The outcome aspect is the health outcome that

results from the patient care activities delivered by the health care team members (DesHarnais, 2013). When using the SPO model to examine the project site, efforts to strengthen the DPP knowledge among the providers were vital as providers' referrals were the main source of the DPP participation. Also, there was no referral mechanism from the project site to the DPP. Thus, it was reasonable to build a referral pathway and strengthen the care coordination with CCL. Since the SPO are interdependent, the expectation was that improving the structure and process would lead to improvements in the outcome utilization of the DPP (Naranjo, & Viswanatha Kaimal, 2011).

Extant evidence supports the idea that the Donabedian model was an appropriate choice to guide this QI project. The framework has been validated via an integrated trauma system and determined that the three aspects of care (SPO) are correlated (Moore et al., 2015). Gardner (2014) applied the framework to assist with a systemic examination of the safety and quality of service innovation that employed nurse practitioners in clinical settings. It was validated as a valuable model to lead the service innovation. In addition, the framework was found to be effective in evaluating QI efforts in hospital departments (Kunkel et al., 2007). It is versatile and valid for QI projects, and it has been applied to several DNP projects related to prediabetes or diabetes management (Anderson, 2020; Drenth, 2017; McCary, 2018; Taylor, 2020; Utaile, 2021). Accordingly, this model was considered a good fit for the project.

Ideally, modifications in structure could affect the process and, therefore, improve patient health outcomes. The framework guided the project and offered direction in terms of examining the current structures and processes in place and identified where changes were needed at this QI project site. During the pre-project phase, outcomes in terms of the number of referrals to the

DPP and CCL merited improvement. Or rather, the eligible patients in this practice were not being referred to the DPP, and communication and follow-up (CCL) were inconsistent.

Therefore, the Donabedian model was employed to guide this project and, ideally by improving structure and processes, would also realize a positive change in outcome (i.e., increase in the utilization of and referrals to DPP and enhanced CCL). To reach this end goal, the project intended to increase the hospitalists' awareness and knowledge of the DPP to address the structural aspect of the care (structure), then to build a referral process to enhance care coordination and the CCL among hospitals, a local DPP, and PCPs (process).

Agency Description

Setting of Interest

The project was conducted in an integrated health care hospital with 151 beds on a 45-acre campus in Missoula, Montana. The facility served people from the Missoula area and surrounding counties. It was the only facility with a separate pediatric intensive care unit in western Montana, and it had the largest, most comprehensive rehabilitation center in the state. "Making Communities Healthier" was the organization's mission, and this was congruent with the proposed QI project (Community Medical Center, n.d.). This project was implemented between January 3, 2022 and February 28, 2022.

Target Population

A group of six hospitalists contracted with the facility was the population of focus for this QI project. These hospitalists work in shifts (days and nights) to care for approximately 1,300 hospitalized patients per year. In 2020, the mean age of patients was 63.8 years, ranging 18.3–

103 years of age. The hypertension- and diabetes-related hospitalizations were 3–4%, and Medicare and Medicaid were the major third-party payers for this patient population (E. Holznagel, personnel communication, October 26, 2021). The agency these hospitalists belong to has identified its vision “to be the unmatched leader in improving quality and reducing the cost of health care for patients in communities we serve” (Sound Physicians, 2021).

As noted in the literature review, there were facilitators and barriers to DPPs’ usage. To increase the DPP utilization, there were three key aims for this QI project: 1) improve the knowledge regarding the DPP among the hospitalists at the QI project site, 2) embed the referral process in the current unit workflow, and 3) develop CCL among the project site, the DPP, and the PCPs of the referred patients.

Description of Stakeholders

The key stakeholders included the local DPP coordinator, hospitalists (in the progressive care unit, medical/surgical floor, and orthopedic floor), a clinical performance nurse (CPN), interdisciplinary team members, information technology (IT) personnel, hospital administrators, patients, etc. The buy-in of the hospitalists was essential as they could spot the potential patients eligible for the DPP, order the lab work to confirm the status of prediabetes patients, and make the referrals to the DPP. The CPN helped with communication with the hospitalists, and the care management (CM) RNs helped with the referral process. Other interdisciplinary team members, such as the diabetes educator and dieticians, could spot potential DPP candidates across the facility. The IT department could help set up the electronic medical record (EMR) interface for the clinicians and simplify the referral process. The buy-in from the hospital administrator and

the local DPP was critical to facilitating the project and development of the CCL. Finally, the patients' willingness to be referred to the DPP was also essential to this project.

Facilitators and Barriers to Implement

A strength, weakness, opportunity, and threats analysis (Appendix A) was conducted to identify possible facilitators and barriers to implementing this DNP QI project. The results helped to develop a plan of action for implementing the project.

Referring patients to the local DPP and communicating with their respective PCPs about the referrals had not been a part of the organizational processes for the hospitalists or care managers. As a result, adding the referral process potentially increased the workload of the clinicians involved in the process. Moreover, when the hospitalists were too busy, they might have overlooked the eligible candidates for the DPP. In addition, the EMR system was expected to undergo incremental reform in December 2021 and March 2022. Thus, the IT department may have been too busy to support the project, and the changes might not have been compatible after the EMR system upgrade.

However, the buy-in from interdisciplinary team members such as dietitians and the diabetes educator could help spot the potential candidates for the DPP. These team members could also remind the hospitalists to make the DPP referrals. The director of the CM unit was supportive of the project and very helpful in facilitating communication with the RNs in the unit. These RNs would be responsible for completing all paperwork for the DPP referrals. Additionally, the informaticist from the IT department had indicated that they might be able to help build *Autotext* in the Cerner EMR system for the hospitalists in January 2022 after things settled with the upgrade of the system scheduled in December 2021. Moreover, the Merit-Based

Incentive Payment System (MIPS) was used by the Centers for Medicare and Medicaid Services (CMS) to determine Medicare payment adjustments for providers (MDinteractive, n.d).

Improvement Activities is a new add-on domain in the MIPS that combines several payment systems into a single performance-based payment system to adjust payment for the providers based on their performance. For hospitalists, 65% of the payments come from quality measures; 20% from cost and efficiency measures and 15% from Improve Activities (Society of Hospital Medicine [SHM], n.d.). There was a potential incentive related to the implementation of the project when applying to Improvement Activities for care coordination, transition of care, or population management under the MIPS (SHM, 2020). Hence, it might motivate the hospitalists to take part in the project.

Project Design

The DNP project was a quality improvement effort. The interventions included a voice-over DPP didactic educational presentation to hospitalists, building CCL among the project site (a hospital), Missoula City-County Health Department (MCCHD) DPP, and the PCPs whose patients referred to the DPP, and building a referral pathway from the project site to MCCHD. The pre- and post-intervention design would be used to evaluate the hospitalists' knowledge of DPP with the pre- and post-educational presentation surveys (Appendix B). Warm handoff letters from the project site to PCPs, "bonding letters" from DPP to PCPs, and the referral frequency from the project site to the DPP would be tracked.

SMART Goals

The project aimed to improve the knowledge regarding the DPP among the hospitalists at the QI project site; develop CCL among the project site, the MCCHD DPP, and the PCPs of the referred patients; and embed the referral process in the current unit workflow. These changes would ideally result in an increase in referrals to the local DPP. The aforementioned are displayed as SMART goals listed below.

- 1) All (100%) of the hospitalists who participated in the DPP educational presentation would show improvement in knowledge of the DPP by December 15, 2021.
- 2) Half (50%) of the DPP-eligible patients would be referred to the DPP by January 31, 2022 (short) and reaching 80% by February 28, 2022 (intermittent).
- 3) Half (50%) of the warm handoff letters were sent to the patients' PCPs at discharge from the hospital by January 31, 2022 (short), and reaching 80% by February 28, 2022 (intermittent).
- 4) Half (50%) of the bonding letters were sent from the DPP to PCPs within one week after receiving referrals from the hospital by January 31, 2022 (short), and reaching 80% by February 28, 2022 (Intermittent).

Project Methods

The proposed QI project was guided using Donabedian's Quality Framework (Donabedian, 2005). Project steps and related methods were organized by the three components of the Donabedian's model: structure, process, and outcome.

Structure

To increase the DPP utilization, the project aimed to improve the structure aspect of care by assessing the hospitalists' knowledge of the DPP eligibility criteria with a pre-educational presentation survey. The pre-educational presentation survey was partially derived and modified from Keck et al. (2019) and was administered electronically via Google Forms. The link for the survey would be provided to the site representative, E. Holznagel, CPN, who would then forward this to the hospitalists involved in the project. This pre-work aspect of the project had already been approved by the Montana State University (MSU) IRB on November 3, 2021.

Once the project was approved by the DNP committee and the MSU IRB, the student sent a voice-over didactic PowerPoint (PPT) presentation of the DPP, eligibility criteria, and the workflow (see Appendix C) to the site representative, E. Holznagel, who forwarded the PPT to the hospitalists. Part of the educational items forwarded to hospitalists and staff was a concise and portable reference sheet (Appendix D) containing the DPP eligibility criteria. Also forwarded to the site representative was the link to the post-educational presentation survey for the hospitalists.

As previously alluded to, the same PPT presentation was sent to the director of the CM to distribute to a group of the CM RNs responsible for doing the paperwork for the DPP referrals for the project. The student also performed an in-person PPT presentation to the CM RNs on December 31, 2022, prior to the project's implementation to disseminate DPP and project workflow after the project was approved by the IRB. The implementation announcement was sent to the dietitians and the diabetes educator along with the voice-over PPT presentation.

Process

Hospital site. For the process aspect of this QI project, the student established a referral pathway from the hospital to the MCCHD DPP. The pathway started with the hospitalists, who identified the patients meeting the inclusion criteria for DPPs. The hospitalist announced the intention to refer at the daily interdisciplinary team huddle. It was possible that other interdisciplinary team members, such as the dietician and the diabetes educator, might identify DPP-eligible patients overlooked by the hospitalists and might alert the hospitalists about the needed referral for the DPP. The CM RN took notes at the team huddle about the DPP referral on the patients' discharge plan. The providers talked with (or might have already talked with the patient before the announcement) the eligible patients about the purpose and benefit of the DPP when doing their routine daily visits before discharge. The CM RN visited the patient and gave the patient the DPP brochure (Appendix E) when doing the routine patient discharge plan visit to make sure that the patient agreed with and understood the discharge plan (CDC, 2021c; National Diabetes Prevention Program, 2020).

If the patient agreed with the DPP referral, the CM RN filled the required Medical Clearance Form (MCF) (Appendix F), which was faxed to the MCCHD DPP. The CM RN also faxed a "warm handoff" letter (Appendix G) to the patient's PCP that explains the referral to the DPP. The "warm handoff" letter also encouraged the PCP to follow and support the patient's enrollment in the program. The CM RN then documented on the log sheet (see Appendix H) for those patients referred to the DPP as well as those patients who refused the service. The patient identifiers on the log sheet were only for chart review purposes and were represented only as aggregate data for the project.

DPP Sites. The DPP coordinators faxed a “bonding letter” (Appendix I) to the PCP to initiate the bi-directional feedback/communication loop within one week after receiving the referral from the hospital. The intent of the “bonding letter” was to establish communication with the PCPs for care coordination in the future and draw their attention to the DPP. The bonding letter explained the referral and encouraged the PCPs to keep motivating patients to be or remain enrolled in the DPP, and it informed the PCPs about the DPP program and incentive from CMS to screen and refer patients with risk of diabetes to DPP. A log sheet to track the bonding letters sent was prepared for the DPP coordinator (Appendix J).

For the convenience of the CM RNs, the student prepared a portfolio containing the workflow maps, DPP eligibility criteria, DPP brochures, copies of MCFs, the warm handoff letters, and log sheets. The process was subject to minor changes or modifications when other stakeholders had suggestions for a better workflow once the project site’s EMR was upgraded in December 2021 and settled down in January 2022.

Outcome

The intended outcome of this QI practice change project was to increase provider and staff knowledge of the DPP, develop the CCL, and ultimately increase the DPP utilization. The student collected the data in aggregate form, shared the results with the stakeholders weekly, and processed the data collected to share with all the stakeholders and the DNP project committee at the completion of the project. Disseminating the project and results will occur with a poster at the MRJCON Research and Scholarship Event at MSU on Thursday, May 12, 2022. Consideration is being given to having the project published in a peer-reviewed venue (journal or conference) in the future.

Communication

The student's email and phone number were listed on the cover of the portfolio. The student attended the interdisciplinary team huddle for the first three days of implementation and then every Tuesday or Wednesday to answer questions. Weekly updated emails for the project progression were sent to all the stakeholders after the site visit and/or the phone contact with the DPP coordinator. The information on encountered problems and mitigation were included in the weekly update to keep all the stakeholders informed.

Confidentiality

To protect patient confidentiality, the project was conducted following the organization's HIPAA policies and procedures. For example, when faxing a PHI-sensitive document such as the MCF, a fax cover sheet was used. The MCF was collected and scanned as part of the patient records. The warm handoff letter was shredded after faxing it to the PCP. The bonding letters were kept by the DPP coordinator, who is required to comply with HIPAA (CDC, 2021b). Log sheets for the CM RNs or their successors and the DPP coordinators were kept in secure areas, the CM RNs' office, and the DPP coordinator's office during the implementation period. Once collected by the student, these sheets were kept in a secured drawer and were shredded within one month after the analysis of data was completed.

Human Subjects Protection

Approval from the MSU IRB was obtained to do the pre-educational presentation survey, and a separate IRB approval was obtained prior to implementing this DNP QI project, which was designated as expedited. A separate IRB approval apart from the MSU IRB was not required by the project site (H. Nagel, personal communication, October 22, 2021).

Measures and Instruments

Measures and instruments to collect data were organized according to three elements (structure, process, and outcome) within Donabedian's framework. These are described below:

- Structure Measure: Assessment of knowledge of the DPP among the hospitalists at the pre- and post-didactic educational presentations among the hospitalists.
- Process Measures: Tracking and comparing DPP patients referred to the DPP and patients eligible for the DPP (referral rate).
- Outcome Measures: Tracking frequency of referrals, the number of warm handoff letters from the project site to the PCPs (warm handoff letter send-out rate), and the number of bi-directional feedback initiating (bonding) letters the DPPs sent to the PCPs within one week after receiving the referral (bonding letter send-out-within-one-week rate). The student was curious to learn if the DPPs would get any referrals from the PCPs reached from the project. However, the project might not have been implemented long enough to see the results. Thus, the only data reported was what was available, this being the PCP out-referral rate.

Data Collection Plan

The data collection plan was organized in SPO fashion as below.

- Structure Measure: The pre-didactic presentation score of DPP-related knowledge was collected via a Google Form prior to the implementation of the project, and the same survey without the attitude exploration was sent along with the voice-over educational presentation PPT on the first day after the IRB approval of the project. The link for the survey was sent to the site representative from the student and then distributed from the

site representative to the hospitalists. Answers were obtained when the participating providers completed the survey. The student collected and coded the answers. The scores at the pre-post voice-over didactic intervention were calculated.

- **Process Measure:** For the referral rate, the chart review and log tracking information were collected weekly to look for DPP-eligible patients and patients referred to the DPP.
- **Outcome Measure:** The warm handoff letters and bonding letters were tracked weekly by the student using a chart review and tracking of log sheets. The results were sent weekly to the stakeholders. New provider referrals (PCP out-referral) received by the coordinator would be noted by the DPP coordinator, and the student could track back the PCPs' names on the log sheet from the project site. The frequency was counted if the name was found.

Data Analysis Plan

A run chart was used to track the weekly changes. At the end of the project implementation, data were summarized in aggregate form and processed in Microsoft Excel and summarized in a run chart and tables, including referral rate, warm handoff letter send-out rate, bonding letter send-out-within-one-week rate, and PCP out-referral rate.

The calculations for data analysis are listed below.

- **Structure:** Average correction percentage, equal to the sum of correction rate (%) divided by the number of participants
- **Process:** Referral rate, weekly and/or accumulated run chart
- **Outcome:** Handoff letter send-out rate, bonding letter send-out-within-one-week rate, PCP out-referral rate, weekly and/or accumulated run chart

Timeline of Project Phases, Feasibility, and Plan for Sustainability

The implementation phase of the project started on January 3, 2022, after the IRB approval, and continued until February 28, 2022. The project to address the utilization of the DPP was evidence-based, and the workflow was subject to change, allowing the project to optimize its workflow to be feasible and better fit some unforeseen circumstances. The results of the project were shared after all analysis was completed, and the final chapters of the scholarly project were written and submitted. For sustainability, the warm handoff letters, bonding letter, and DPP brochures used for the project would remain in place for the clinicians to use after the project was completed. Moreover, an IT ticket was submitted on February 19, 2022 to set up a “daily report” containing daily DPP-eligible patients’ information directed to an email box of a volunteer dietitian who was willing to continue with the work initiated from this student’s project.

CHAPTER FOUR

RESULTS AND DISCUSSION

Results

The DPP is underutilized, and a lack of provider awareness is one of the major barriers. This project aimed to increase the awareness and knowledge of the DPP via multiple avenues, including voice-over educational PPT presentations among the hospitalists in a local hospital; developing a clinical–community linkage (CCL) among the project site, a local DPP, and PCPs; and building a referral pathway to the local DPP from the project site. During the implementation, the project’s workflow was modified to reach more providers and DPP-eligible patients.

The pre-educational presentation survey was opened on November 3, 2021, after receiving approval from the MSU IRB and with this aspect of the project being designated as exempt (Protocol HLT110321-EX). After receiving the IRB approval for the full project on December 21, 2021, the voice-over PPT educational presentation to prepare the stakeholders was distributed on December 27, 2022, and the post-survey was opened until the project ended. The project was implemented from January 3, 2022 to February 28, 2021. The modified workflow started on February 8, 2022. The results entailed both the original and modified workflows.

Workflow Change

Early in the implementation, the hospitalists missed the DPP-eligible patients without prompts. Only one DPP-eligible patient who merited referral to the DPP was announced at the huddle. The student had to function as a “flag” to prompt the providers. In addition, 12 of 14 and

16 of 31 patients were DPP eligible when admitted under the care of cardiologists and general surgeons (GS), respectively. These providers and patients were not reached due to the original workflow. Therefore, the workflow was modified, and the project was opened to all the DPP-eligible patients admitted to the PCU and Medical/Surgical floors, reaching out to the hospitalists, cardiologists, GS, and the emergency department (ED). In addition, the DPP presentations were given virtually to the hospitalists and cardiologists. However, the ED and GS did not respond to the student's invitation.

Furthermore, the CM RNs were overwhelmed by the extra tasks added by the project. The project needed someone in charge of the project tasks, originally arranged with the CM director and CM RNs. During the transition, a diabetes educator agreed to act as an interim host before a designated dietitian took over the tasks on February 8, 2022 (Appendix C). Additionally, the project would not rely on the hospitalists to spot the DPP-eligible patients. It seemed practical to decrease the providers' workload during the surge of the omicron variant of COVID-19.

Meanwhile, the warm handoff letters to inform PCPs of the DPP referral focused on the patients referred, and the project workflow was modified so that the letters were sent to the patients who refused the DPP in hopes of reaching more PCPs. The Medical Clearance Form (MCF) was replaced with a Notification-to-DPP Form (Appendix F) to inform the DPP coordinator and allow the coordinator to complete the MCF to decrease the workload from the project site.

Characteristics of the Providers and DPP-Eligible Patients

The approximate total years of practice were around 50 years from all six hospitalists and more than 80 years from the five cardiologists. The data from these providers were located on the U.S. News website (U.S. News, n.d.)

During the eight weeks of implementation, there were a total of 35 DPP-eligible patients (average of 4.5 patients per week) (Table 1), of whom twenty-four were missed and 11 were reached and the DPP offered. Of these 11, nine refused participation in the DPP, while two were referred. The refusal reasons included unawareness of the prediabetes diagnosis or high risk for diabetes (n=5), competing health priorities (n=3), and not meeting personal expectations (n=1).

SMART Goals Addressed

SMART goal #1: improvement in knowledge of the DPP. For this goal, the pre/post presentation survey data were collected and compared to assess the providers' knowledge about the DPP. The pre-educational presentation survey was performed only among the hospitalists, which was conducted before the workflow changed. The goal that all the participating hospitalists (100%) would show improvement in knowledge of the DPP by December 15, 2021 was partially met because the project was not approved until December 21, 2021 and the providers other than hospitalists were invited to participate in the survey. Meanwhile, the pre-educational presentation survey had three entries from the hospitalists, and the post-educational presentation survey had two entries, with one entry dated before and the other dated after the workflow modification.

From the pre-educational presentation survey, all participants had positive attitudes toward the DPP (Table 2, questions A6 and A9 to A11). The post-educational presentation

survey showed improvement in awareness of the DPP (P1) and local DPPs (P2) from 67% to 100%; from 0% to 100% in how to refer patients to DPP (P3) and familiar with DPP eligibility (P4); from 78% to 100% in parameter to diagnose prediabetes (P5a); and from 67% to 100% in proportion of weight reduction to recommend to DPP-eligible (P7a). While 100% of participants were positive with the criteria to diagnose prediabetes (A5) and the proportion of weight loss to recommend for people with prediabetes (A7) respectively, only 78% (A5a) and 67 % (A7a) answered correctly in the pre-educational survey.

SMART goal # 2: DPP-eligible patient referred to DPP. The DPP-eligible patients and the DPP-eligible patients referred to the DPP were tracked to see how the referral process would work at the project site for this goal. The goals that 50% of the DPP-eligible patients would be referred to the DPP by January 31, 2022 (short goal) and reaching 80% by February 28, 2022 (intermittent goal) were not met. The referral rates were 25% in the third and sixth weeks; the overall referral rate was 5.7% (Figure 1).

SMART goal # 3: handoff letter send-out rate. For this goal, the project tracked the warm handoff letter send-out rate. Both the short and intermittent goals were met, to reach 50% of the warm handoff letters sent to the patients' PCPs at discharge from the hospital by January 31, 2022 (short) and reaching 80% by February 28, 2022 (intermittent) (Figure 2). The warm handoff letters were sent out when the patients were referred in the third and sixth week. The overall rate reached 200% after the workflow was modified.

SMART goal # 4: bonding letter send-out rate. The bonding letter send-out-within-one-week rate was tracked for this goal: 50% of the bonding letters would be sent from the DPP to

the PCPs within one week after receiving referrals from the hospital by January 31, 2022 (short goal) and 80% by February 28, 2022 (intermittent goal) were not met. The DPP coordinator did not send two bonding letters to the PCPs within the one-week time frame. There were no referrals received at the DPP from the PCPs reached with this project (out-referrals) by February 28, 2022.

Discussion

One of the project aims was to increase awareness and knowledge of the DPP. As stated in the results, this was achieved and noted across several survey items (Table 2). The results were similar to a survey done among Montana's providers in 2020 in which the majority of the providers had a positive attitude toward the DPP but were less familiar with lab values to diagnose prediabetes and recommendations for weight loss and exercise (Montana DPHHS, 2020), supporting that educational presentations should include these items, so providers would be ready to talk with patients when opportunities arise. Moreover, following the educational session, the cardiologists asked for the MCF to be used in their offices. The results supported the importance of increasing the awareness of the DPP among the providers (Ali et al., 2019; Herman et al., 2021; Nhim et al., 2018). Nonetheless, the scholarly project was a QI effort and not a research study. Therefore, results should be interpreted with caution due to the small sample size, unestablished validity and reliability of the survey, and uncontrolled survey participants (hospitalists only for pre-educational presentation survey and both hospitalists and cardiologists for post-educational presentation survey).

Several DPP-eligible patients were found by cardiologists and GSs (providers not originally included in the first rendition of the project workflow). Unfortunately, the student

could not reach the GS and ED providers to attend the presentation before the project ended. Nonetheless, future efforts to increase providers' awareness of the DPP could focus on providers managing a high volume of DPP-eligible patients. This would be of value to cardiologists as prediabetes was associated with an almost three times higher prevalence of unrecognized myocardial infarction (Brannick & Dagogo-Jack, 2018). Another practice group of providers who might manage a high volume of DPP-eligible patients are ED providers and should be considered to improve awareness and utilization of DPP in this group of providers (Bar-Dayana et al., 2016; Rouse & Shoukry, 2014).

Lack of time was another factor providers noted for not referring patients to the DPP (Halley et al., 2020). The project's implementation was conducted during the surge of the omicron variant of COVID-19, which likely had a great impact on why the original workflow to utilize hospitalists and CM RNs to initiate and implement the referral was not actualized. While the cause of low participation is unclear, the hospitalists and their care team could be affected by more complicated cases, staffing shortages, physical and emotional exhaustion, and constant evolution of the best practices and protocols during the pandemic (Keniston et al., 2022).

Another aim of the project was to set up a referral pathway. Lack of time from the staff, patients' refusals, and the workflow not meeting the expectation before the modification were some main causes impeding the DPP referral (Table 1). The missing patients remained an issue even after the designated dietitian was on board because the dietitian was too busy, or the patients were discharged before the dietitian could reach them. An embedded workflow into the EMR could provide a "flag" to alert the dietitian of DPP-eligible patients. The EMR could also be set up to send a handoff note to the PCPs at the time of discharge for DPP-eligible patients

identified by the EMR. In this case, what the dietitian missed could be addressed and followed by the PCPs. Using the EMR to identify DPP-eligible patients has been successfully implemented in other settings, resulting in increased screenings and referrals to DPPs (Holliday et al., 2019; Keck et al., 2020; Moin et al., 2016). Also supported by the literature is that integrating the referral workflow into the EMR or using the EMR to manage prediabetes patients could facilitate the referral process (Nhim et al., 2021; Tseng et al., 2019). Unfortunately, the IT department at the project site was overwhelmed by the EHR (Cerner) incremented system upgrade; thus, it was unable to set up any workflow in the EMR to simplify the referral process during implementation.

In addition, most of the DPP-eligible patients who refused the referrals denied having prediabetes or being at risk of developing diabetes before being approached by the volunteer staff, or they stated they had competing priorities (Table 1). There are similar results in the literature (Ali et al., 2019; CDC, 2020; Halley et al., 2020; Mensa-Wilmot et al., 2017; Roper et al., 2019). Being told by the physician about one's diagnosis was considered a key to changing one's behavior for better health (Alexendre et al. 2021; Joachim-Célestin et al., 2020). This could be why more than half of the refusals came from the patients who had not been made aware of their diabetes risk by their PCPs. The student wonders whether the refusal rate could be decreased if the original workflow did not need to be modified because the information from the physicians could motivate the patients to make behavior changes (Alexendre et al., 2021; Joachim-Célestin et al., 2020; Tseng et al., 2019). Moreover, patients often refused the DPP referrals when the other major health conditions competed with their personal health priorities;

rather, the DPP could neither meet their expectations nor be aligned with patients' personal goals (Baucom et al., 2021).

The last aim of the project was to build CCL. For clarity, sending warm handoff letters to PCPs from the project site upon patients' discharge and sending bonding letters to PCPs from the DPP coordinator within one week of patients' discharge were used to measure this aim (Appendix C). A major aspect of this scholarly project was to partner with a local DPP and to bring PCPs on board to increase the awareness and the utilization of the DPP. The handoff letters were sent out whenever there were patients reached for the DPP to encourage the PCPs to follow up with the patients' prediabetes diagnosis. However, it would be interesting to see if the handoff letter send-out rate could sustain the impact of a higher referral rate. Moreover, the warm handoff letter could have reached more PCPs if the project had included the patients missed (n=24). To simplify the workflow, an embedded workflow in the EMR, as mentioned earlier, could easily replace the paperwork that the project tried to generate (e.g., handoff letters and referrals).

Additionally, the goal of sending the bonding letter within one week was not met. The DPP coordinator could not reach the patient to get a release of information (ROI) before sending out the bonding letter and was too busy to send this letter out for the following referral. This is important as the ROI was not mentioned prior to the implementation of the project, and it appeared as though this was an added process for the DPP site to comply with the HIPAA regulation.

As ongoing communication among stakeholders is essential for a successful project, lack of clarity, lack of time, not having an established relationship with a project site, and political

barriers could pose as barriers to implementing future DNP projects (Moran & Burson 2017). These factors could be why the DPP coordinator did not actively report the added ROI in the workflow at the site. In hindsight, the student should have made weekly calls to the DPP site as planned and not waited until patients were referred in addition to providing the emails and weekly reports. Moran and Burson (2017) suggested having a mentor who has a relationship with the organization who can open the door for the project site and act as a project champion, particularly when the DNP student does not have an established relationship with the organization. This is especially true and useful when multiple parties are involved in a project like this one and can help with smoother implementation.

Lessons Learned

Although most of the SMART goals were not achieved, important lessons were learned. The processes conducted and findings from this QI scholarly project identified important issues related to prediabetes at this project site. First, the providers who took part in the survey did show improvement in their awareness and knowledge about the DPP after the educational presentation. Second, we identified that a mechanism to flag the provider about the DPP-eligible patient was needed for the providers and the designated dietitian. Third, there were 35 DPP-eligible patients with an average of 4.5 patients per week identified from the project. Considering the numbers did not include the 12 cardiologists and 16 GS patients identified at the early stage of the project, there was a great opportunity to address diabetes prevention at this project site. Fourth, a high volume of the DPP-eligible patients missed (68.6%) indicated there is a potential for improvement. Finally, five out of nine (55%) patients were not aware of their prediabetes or

diabetes risk. This indicates that care providers had room to improve in terms of educating patients about the condition as well as offering them options to address this health issue.

Limitations

There were several limitations to implementing the project. First, the implementation period was short and was further reduced with modifications in workflow, so the potentiality of the project might have been impacted. Second, the designated volunteer dietitian was employed part-time; therefore, eligible patients were missed when the dietitian was not working or there were conflicts with the dietitian's work priorities. Also, the surge of the omicron variant of COVID-19 likely affected the implementation of the project. Finally, a small number of providers took the survey, and very few patients were referred in the referral process; hence, all the results related to measures should be interpreted with caution.

Recommendations

This eight-week scholarly project found a good number of DPP-eligible patients at the project site. The need to promote awareness of the DPP among the providers who admitted or cared for patients at the project site is imperative to reduce diabetes risk in Montana. Further, lack of time proved to be a major hindrance to the referral process for many stakeholders in the project. One key recommendation is to embed the referral workflow into the EHR as a way of simplifying the process. This would allow for flagging the providers of DPP-eligible patients, sending referral notes to the DPP, and a handoff note to the PCPs. Another recommendation would be to focus on different groups of providers to disseminate DPP, promote awareness, and integrate the referral process in the EMR system. This would serve two key purposes: first, it

would simplify and decrease the workload for the stakeholders and increase their buy-in; and second, it could potentially address the lack of time described by providers. Additionally, having a project champion from a higher-up administrator could help facilitate the change. Finally, building a referral mechanism to the DPPs from other settings, such as the ED or even dental clinics (as periodontitis is associated with prediabetes) would strengthen community awareness and engagement (Maboudi et al., 2019).

Conclusion

Despite outpatient clinics being ideal settings to routinely screen and refer patients to a DPP, the utilization has remained low since the NDPP was established by the CDC in 2010. Making changes outside of the ideal settings to promote care coordination and referrals should be considered. Using a hospital as a venue to establish a referral policy between the DPP and PCPs was supported and successfully implemented (Kunz et al., 2017; Mensa-Wilmot et al., 2017). Overall, the project helped unveil the patients who were at risk of developing diabetes at the project site. The project also illuminated opportunities to improve and simplify the process, so a more tangible system could be established for the referral of patients to local DPPs and to actualize a better CCL for diabetes prevention in the hospital setting.

Table 1. Demographic Data of DPP-Eligible Patients

Item	Category	Patients Number
Age	60-69	10
	70-79	7
	40-49	6
	50-59	6
	20-29	2
	30-39	2
	80-89	2
Sex	Female	18
	Male	17
Race	Caucasian	29
	Not Available	3
	Native American	2
	Asian/Oriental	1
Insurance	Medicare	14
	Medicaid	9
	Private	6
	Veteran	3
	Self-pay	2
	Not Available	1
Patient number	DPP eligible	35
	Disseminate about the DPP	11
	DPP referred	2
	Refused DPP	9
	Patient missed	24
Causes of refusal	Unaware of prediabetes or high risk of diabetes	5
	Competing health priority	3
	DPP did not meet the expectation	1
Cause of missing case	Lack of time	11
	Unexpected workflow	7
	DM educator/dietitian was off	4
	Patient discharged before the dietitian's visit	1
	Patient in procedure	1

Table 2. Pre- and Post-Educational Presentation Survey

Question	Pre-/Post-Education	N	Answer
A1/P1: Are you aware of the National Diabetes Prevention Program to prevent diabetes?	Pre	3	Yes 67%, No 33%
	Post	2	Yes 100%, No 0%
A2/P2: Are you aware there are CDC-recognized Diabetes Prevention Programs in Missoula, Montana?	Pre	3	Yes 67%, No 33%
	Post	2	Yes 100%, No 0%
A3/P3: Do you know how to refer a patient to a Diabetes Prevention Program?	Pre	3	Yes 0%, No 100%
	Post	2	Yes 100%, No 0%
A4/P4: Are you familiar with the eligibility for a Diabetes Prevention Program?	Pre	3	Yes 0%, No 100%
	Post	2	Yes 100%, No 0%
A5/P5: Do you know the parameters to diagnose prediabetes?	Pre	3	Yes 100%, No 0%
	Post	2	Yes 100%, No 0%
A5a/P5a: If yes, please write down the lab value for HbA1C, fasting blood glucose, and OGTT to diagnose prediabetes.	Pre	3	Correct 78%
	Post	3	Correct 100%
A6: Do you agree that prediabetes can be prevented or delayed through an evidence-based lifestyle modification program like a Diabetes Prevention Program?	Pre	3	Yes 100%, No 0%
A7/P7: Do you know the proportion of weight loss you would recommend for people with prediabetes?	Pre	3	Yes 100%, No 0%
	Post	2	Yes 100%, No 0%
A7a/P7a: If yes, please write down the proportion (%) of weight loss you would recommend for people with prediabetes?	Pre	3	Correct 67%
	Post	1	Correct 100%
A8/P8: Without other health issues to consider, how many minutes of physical activity/week should be recommended for people with prediabetes?	Pre	3	Correct 100%
	Post	1	Correct 100%
A9: Would you be willing to refer a patient to a diabetes prevention program if you feel you have the knowledge and tools for an appropriate referral?	Pre	3	Yes 100%, No 0%
A9a: If no, what could be the reason(s) that you are not willing to refer a patient to a diabetes prevention program even if you are empowered by knowledge and tools?		N/A	N/A

Table 2 Continued

Question	Pre-/Post-Education	N	Answer
A10: Do you expect patients with prediabetes who complete a Diabetes Prevention Program to have long-term, positive changes in their health behaviors?	Pre	3	Yes 100%, No 0%
A10a: If no, what could be the reason(s) that you do not expect patients with prediabetes who complete a Diabetes Prevention Program to have long-term, positive changes in their health behaviors?		N/A	N/A
A11: Do you expect patients with prediabetes who complete a Diabetes Prevention Program to have a reduced chance of progressing to diabetes?	Pre	3	Yes 100%, No 0%
A11a: If no, what could be the reason(s) that you do not expect patients with prediabetes who complete a Diabetes Prevention Program to have a reduced chance of progressing to diabetes?		N/A	N/A

Figure 1. Referral Rate

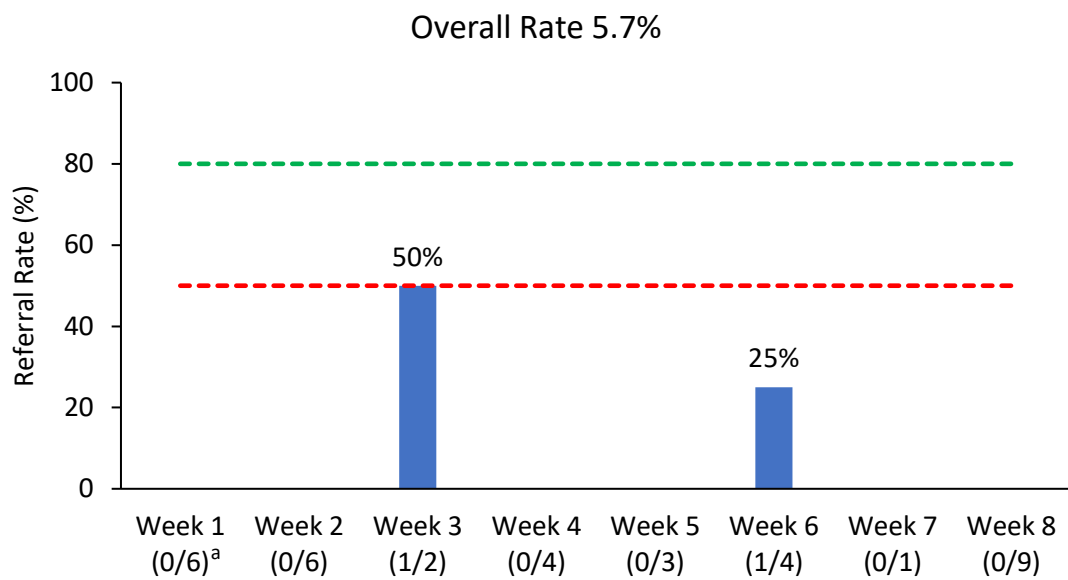
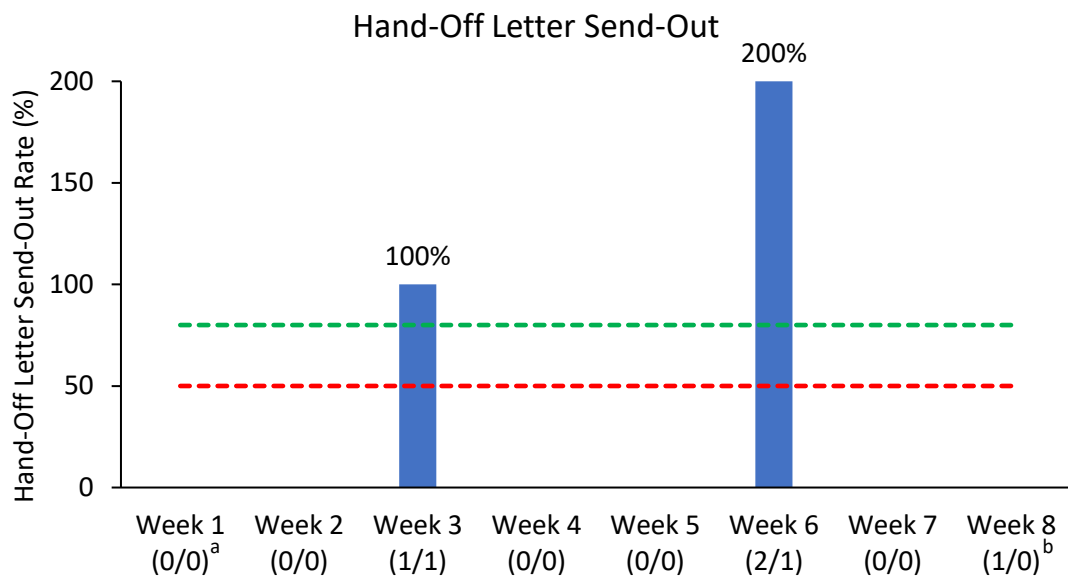


Figure 2. Warm Handoff Send-Out Rate



CHAPTER FIVE

REFLECTION ON DNP ESSENTIAL AND EDUCATIONAL JOURNEY

Introduction

The doctor of nursing practice (DNP) degree is a terminal degree that prepares nurses to function at the highest professional level of practice. This DNP essential intends to ensure that all graduates meet the rigorous expectations of practice at this level (American Association of Colleges of Nursing [AACN], 2006). The student will reflect on how the DNP program has allowed the student to meet the DNP essentials as well as discuss how implementing/evaluating the QI project to address practice problems has impacted the student's career as a doctorally-prepared nurse practitioner.

Meeting the DNP Essentials from MSU DNP ProgramEssential I: Scientific Underpinnings for Practice

The scientific underpinning for practice reflects a broad spectrum of knowledge delineated from the sciences and enables the student to quickly translate this information to benefit patients in daily practice. The student recalls learning N601 Advanced Physical Assessment focusing on skills needed for health assessment, synthesizing and analyzing information, and documenting pertinent information for clinical practice; N602 Advanced Pathophysiology providing knowledge of the comprehensive physiological functions and pathophysiological changes in the human body; and N603 Advanced Pharmacology aiding the understanding of the principles of pharmacokinetics and pharmacodynamics. The student worked

with a simulated patient, *Tina*, with various illnesses in N601, attended weekly case discussions in N602, and completed an extensive reading with some discussions in N603. The didactic web-based learning and assignments mentioned were derived from the basic sciences and are essential for clinical practice. The DNP program has helped the student build a great foundation for practice as an NP and to meet the constantly evolving knowledge that contributes to practice changes.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking

Understanding practice management in terms of balancing health care outcomes with quality of care is an expectation of the DNP graduate and is required by the AACN (2006). A DNP graduate should be prepared to assess the impact of practice policies or procedures on the patient populations they serve. The course, N608 Design of Healthcare Delivery System, helped the student in meeting the expectations and learning tools of system engineering, including value stream mapping, workflow mapping, root cause analysis, Pareto chart, and others. Assignments and discussions of the course enhanced the skills that could be applied to any potential project for system improvement. Without a doubt, the course provided the student with a keen sense to identify opportunities to advocate for improvement within the health care system and the integration among health care professionals for a safer and better health care delivery system.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

DNP graduates are expected to engage in advanced nursing practice and lead evidence-based practices (AACN, 2006). A DNP graduate should have the ability in knowledge

application activities such as the translation of research into practice and evaluating the improvement in practice and health care outcomes (AACN, 2006). This reminds the student of the courses N674 DNP Scholarly Project Seminar and N615 Translational research for Advance Practice. Their contents and projects guided the student to examine inter- and intra-disciplinary collaborations to move scientific research toward a unique intervention for practice issues. The assignments in these courses enabled the student to translate research to develop an intervention (QI practice change).

Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care

Essential IV includes the expectations of the DNP graduate that involve using information technology (IT) to lead and promote patient care and health systems and academic settings (AACN, 2006). The N610 Health Care Informatics is strongly linked to this essential. The student was able to explore the IT system in health care to improve the management and communication of health information in N610. The assignments were worked incrementally toward the end project where the student examined and analyzed an IT-related issue at work, and then proposed a plan to improve and evaluate the issue. The knowledge and experience earned helped the student to communicate with the IT department to implement this project. One example was the attempt to incorporate IT into the workflow during project implementation.

Essential V: Health Care Policy for Advocacy in Health Care

Approaching health care policies related to finance, regulation, safety, quality, access, and efficacy are expected of DNP graduates (AACN, 2006). In N612 Ethics, Law, and Policy for Advocacy in Healthcare, the integration of bioethics, ethical comportment, legal issues, and the

function of law and policy analysis were applied to clinical practice. The last assignment of the course allowed the student to pick one of the practice issues and dive into the policies and legal aspects impacting the issue and then draft a letter to key state and/or national leaders (e.g., state legislature and members of Congress). The work helped create a tangible example of how a future NP could advocate for health care issues affecting outcomes.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes

The expectations of Essential VI are that a DNP graduate should be able to lead an effective interprofessional team that works collaboratively to achieve safe, timely, efficient, effective, equitable, and patient-centered care in our complex health care system (AACN, 2006). The skills of assessing and analyzing the multi-tiered health care systems were necessary for the student to initiate an intervention to improve patient and population health outcomes. As the US health care system is complex and multi-tiered, it is challenging to make changes in isolation and merits collaboration with interprofessional team members. The best example of this was implementing the DNP scholarly project. Collaborating with others was a vital part of the project as the processes involved are never straightforward in such a complex system. The DNP program prepared the student with courses that layered a solid foundation to implement this DNP project.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

Essential VII requires DNP graduates to implement clinical prevention and population health activities. The student recalled doing a specific population health assessment of veterans in N614 Vulnerability and Health Care in Diverse Communities. The overall work in the course

allowed the student to do a thorough assessment of Montana veterans, risk factors affecting this population, and issues this group faced. The course proposed potential strategies to mitigate the issues faced by Montana veterans and to promote the health of this population. The student uses the knowledge gained in the course to recognize clinical issues in preventing and improving population health as part of the DNP scholarly project. Thus, the student's DNP project is a great example of achieving this essential.

Essential VIII: Advanced Nursing Practice

Essential VIII requires DNP students to exhibit advanced assessment skills and apply them to practice based on multiple aspects of science such as biophysical, behavioral, sociopolitical, cultural, economic, and nursing. To achieve this sophisticated level of practice, the program has encompassed all aspects of science throughout its curriculum. For example, the clinical rotations introduced learning beyond textbooks and reinforced it with real-life experience. While the student feels equipped with the tools to succeed, what is still needed is time and more clinical practice to grow into a confident, advanced NP.

Impact of QI Project on Career

This QI project idea began to bloom when the student had her second clinical rotation in a rural area of Montana. The student was astonished by the high prevalence of diabetes and low self-care management skills in that community. With some inquiries at the clinical site and research, the student came across information about the DPP. The student, just like most of the providers in Montana, had never heard about this program. The student was able to unveil rich literature about the DPP and subsequently a practice gap was identified, and the project was

initiated. The process of implementing and evaluating a QI project has strongly influenced an introverted person like the student. It pushed the student out of her comfort zone and to take the lead on this health care issue. The process of how the project informed and impacted the student's career is best examined using the DNP essentials.

This project started with the scientific underpinnings of diabetes and prediabetes in clinical practice. The literature review helped to pinpoint the barriers and facilitators of the DPP and to translate the research, related to the DPP, as a mechanism for increasing its awareness and referrals (Essential I). With systemic thinking, the student found that referring DPP-eligible patients to the DPP was not an organizational standard at the project site (Essentials II, III, V). Hence, building a referral pathway and CCL were set as parts of the project's aims after reviewing the literature. These aims guided the project and delivery of care, which included initiating the referral pathway from the project site to the DPP and bringing the PCPs on board for better care coordination to prevent diabetes. These actions fit well with the essentials VI (collaborating interprofessionally) and VII (promoting population diabetes prevention and the nation's health). Not being able to get IT support to facilitate the workflow (essential IV) in the process was the most frustrating, albeit realistic, element of the project. The workflow might have been much more workable for the stakeholders who were discouraged by lack of time. As outlined in essential VIII, using conceptual and analytical skills is required to evaluate the link among organization, practice, and population. The student employed these skills by applying translational research and using evidence-based changes pertinent to this project. The experience of implementing and evaluating the project was priceless as it required the student to apply all of

what she learned in the DNP program at MSU. With this experience, the student feels well-abled to meet the expectations of the DNP essentials and gain a solid foothold to step into a new role.

Overall, both the program and project broadened the student's view of the health care system. The skills learned in the DNP program enabled the student to make meaningful changes to address quality of care, the health of a population, and reducing the health care burden of the nation. Being able to meet all the essentials and implement the DNP project provided the opportunity for the student growth, professionally and personally, into the role of a DNP-prepared advanced practitioner.

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APPENDICES

APPENDIX A

SWOT ANALYSIS

Strength • Strong evidence back up the purpose of the project and the intervention. • The purpose of the project is congruent with the vision of the agency the hospitalists belong to “to be the unmatched leader in improving quality and reducing the cost of health care for patients in the communities we serve.” • The purpose of the project is congruent with the mission of the study site “Making Communities Healthier.” • Buy-in from the CPN for the hospitalist, Director of CM, dietician, and Informatics Analyst. The diabetes educator is expected to be on board as well. • All the paper work-MCF, the handoff letter from hospitalists to PCPs, a brochure will be prepared and ready for the CM to use. • DPPs offered online classes during the pandemic.	Weakness • The project relies on the providers’ wills and memory to identify the possible candidates and make referrals. • No possible IT support to simplify the workflow before the Cerner update in December and the IT will probably not be able to help with the workflow until the new EMR system is stabilized. • Not knowing the hospitalists’ attitude regarding the DPP.
Opportunity • Strengthen the relationship with health care neighborhoods, increasing the likelihood of referrals (to the hospital and hospitalists). • Link to MIPS (Merit-based Incentive Payment System) for improvement activities (IA_CC_11 managing transition of care; IA_CC_8 Implementation of practices/process that document care coordination). • Buy-in from the hospitalists after the pre-work survey. • The clinicians gain another tool (DPP) to manage the patient with prediabetes or high risk to develop diabetes. • The clinicians gain another tool (DPP) when treating the patient with diabetes who may benefit from LSM.	Threats • Increase workload to the hospitalists. • Increase workload to the case managers. • Expected Cerner upgrade in December.

APPENDIX B

PRE- AND POST-EDUCATIONAL PRESENTATION SURVEY

Verbiage for Pre-survey

Dear Colleagues,

This is Huei-Ling Tsao. I am teaming up with Emily Holznagel to do my DNP scholarly project about diabetes prevention. I will initiate the project with a “get to know you” survey via Google Form to learn about the current practice and your knowledge about prediabetes. I will also conduct the survey again during the post-intervention/project period to evaluate how the intervention impacts your knowledge on this subject. Proceeding with this survey indicates your consent to participate. Please note: your participation is voluntary, and you can stop at any time. I will not ask for demographic information in the survey nor will I link the survey to your emails, so I will not be able to connect respondents to survey responses. Please do your best to answer the questions without looking up answers or skipping questions. The sincerity of your responses will help to better guide this process and hopefully render a successful project. Again, please note: your participation is voluntary, and you can stop at any time.

Thank you so much in advance for your help.

Verbiage for Post-survey

Dear Colleagues,

This is Huei-Ling Tsao. As you may have known that I am teaming up with Emily Holznagel to do my DNP scholarly project about diabetes prevention. I am, again, conducting a survey via Google Form to evaluate how the educational presentation impacts your knowledge of the Diabetic Prevention Program.

Proceeding with this survey indicates your consent to participate. Please note: your participation is voluntary, and you can stop at any time. I will not ask for demographic information in the survey, nor will I link the survey to your emails, so I will not be able to connect respondents to survey responses.

THE SURVEY TAKES LESS THAN 3 MINUTES TO COMPLETE. THANK YOU SO MUCH IN ADVANCE FOR YOUR HELP!

Below were the survey questions included in the pre-and post- educational presentation surveys except the last three questions.

Are you aware of the National Diabetes Prevention Program to prevent diabetes?

Yes/No

Are you aware there are CDC-recognized Diabetes Prevention Programs in Missoula, Montana?

Yes/No

Do you know how to refer a patient to a Diabetes Prevention Program?

Yes/No

Are you familiar with the eligibility for a Diabetes Prevention Program?

Yes/No

Do you know the parameters to diagnose prediabetes?

Yes/No

If yes, please write down the lab value for HbA1C, fasting blood glucose, and OGTT to diagnose prediabetes.

Do you agree that prediabetes can be prevented or delayed through an evidence-based lifestyle modification program like a Diabetes Prevention Program?

Yes/No

Do you know the proportion of weight loss you would recommend for people with prediabetes?

Yes/No

If yes, please write down the proportion (%) of weight loss you would recommend for people with prediabetes.

Without other health issues to consider, how many minutes of physical activity/week should be recommended for people with prediabetes?

Would you be willing to refer a patient to a diabetes prevention program if you feel you have the knowledge and tools for an appropriate referral? (not included in the post-survey)

If no, what could be the reason(s) that you are not willing to refer a patient to a diabetes prevention program even if you are empowered by knowledge and tools?

Do you expect patients with prediabetes who complete a Diabetes Prevention Program to have long-term, positive changes in their health behaviors? (not included in the post-survey)

If no, what could be the reason(s) that you don't expect patients with prediabetes who complete a Diabetes Prevention Program to have long-term, positive changes in their health behaviors?

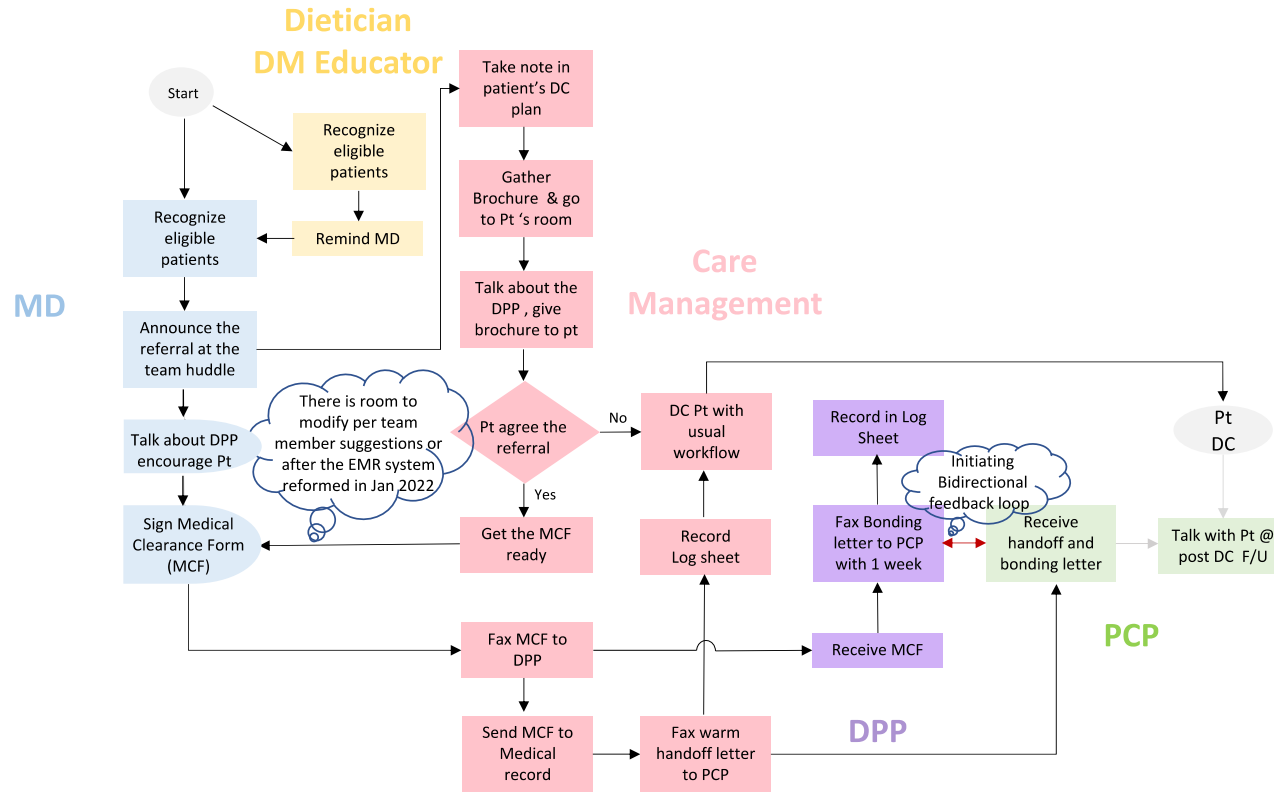
Do you expect patients with prediabetes who complete a Diabetes Prevention Program to have a reduced chance of progressing to diabetes? (not included in the post-survey)

If no, what could be the reason(s) that you don't expect patients with prediabetes who complete a Diabetes Prevention Program to have a reduced chance of progressing to diabetes?

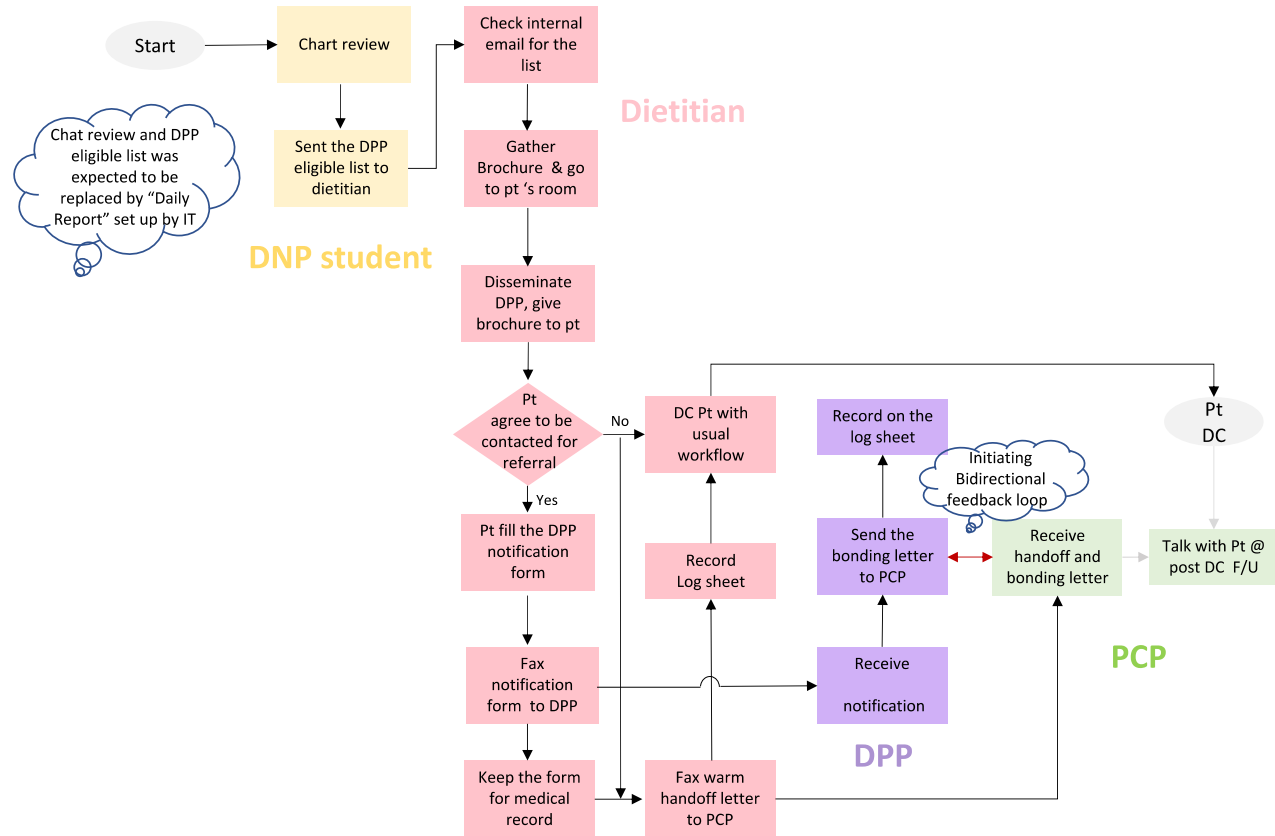
APPENDIX C

ORIGINAL AND MODIFIED WORKFLOW

Original Workflow



Modified Workflow



APPENDIX D

CONCISE REFERENCE SHEET FOR DIABETES PREVENTION PROGRAM

DPPs in Missoula:

Providence Medical Group and Missoula City-County Health Department (MCCHD). **Only the MCCHD DPP** will be used for the project purpose.

Insurance Coverage:

DPP is covered by Medicare (once in a lifetime), Medicaid. MCCHD offers scholarships for patients who are discouraged by monetary factors.

Employers that offer DPP to their employees:

Costco, Lowe's, Walmart, Wells Fargo, Montana State Public Employees.

DPP FOR ALL: accepting patients with all physical abilities

DPP Session: January, March, September

Medical Eligibility Criteria for DPP

1. Age 18 years or over
2. Overweight or Obese ($BMI \geq 25$)
3. Additional qualifying criteria (at least one)
 - a. High Blood Pressure
(Eligible if $\geq 130/80$ mmHg or taking blood pressure control medication)
 - b. Dyslipidemia
(Eligible if HDL <50 mg/dL for women or <40 mg/dL for men, LDL ≥ 130 mg/dL, Triglycerides ≥ 200 mg/dL, or taking lipid control medication)
 - c. Diagnosis of Prediabetes
 - d. Abnormal Glucose
(Eligible if fasting plasma glucose is 100-125 mg/dL (IFG), or A1C 5.7-6.4%)
 - e. History of Gestational Diabetes
 - f. Prediabetes Risk Test >5 (MDCalc: ADA diabetes Risk Calculator)

Exclusion Criteria for DPP

Previously diagnosed with type 1 or type 2 diabetes.
Being pregnant.

Medical Eligibility Criteria for Medicare DPP (1/life time)

- Are enrolled in Medicare Part B;
- $BMI \geq 25$; ≥ 23 if self-identified as Asian;
- A1c (HbA1c) between 5.7 and 6.4%, or a fasting plasma glucose of 110-125 mg/dL, or a 2-hour post-glucose challenge of 140-199 mg/dL (oral glucose tolerance test) within the previous 12 months;
- Have no previous diagnosis of type 1 or type 2 diabetes with the exception of a previous diagnosis of gestational diabetes; and
- Does not have end-stage renal disease (ESRD) at any point during the MDPP services period.

Contact for DPP coordinator

Courtney Chase, Program Coordinator
Address: 301 W. Alder, Missoula, MT 59802
Phone: 406-258-4935 (Work)
Fax: 406-258-4906

APPENDIX E

DPP BROCHURE FOR MEDICARE PATIENTS

The Medicare Diabetes Prevention Program (Medicare DPP) is part of the National Diabetes Prevention Program, led by the Centers for Disease Control and Prevention (CDC).

This program, covered by MEDICARE PART B, can help you make achievable lifestyle changes and cut your risk of type 2 diabetes by more than 70%.

CONTACT US

DPP Coordinator
Missoula County Health Dept.
301 W. Alder,
Missoula, MT 59802
Ph: 406-258-4935 (W)



[Insert organization name,
street address,
city, state, zip code]

[Insert recipient name
street address
city, state, zip code]

Medicare Can Help You Prevent Type 2 Diabetes



THE MEDICARE DIABETES PREVENTION PROGRAM
IS COVERED BY MEDICARE PART B



NATIONAL
DIABETES
PREVENTION
PROGRAM



What a real participant says:

"I needed to make changes to my lifestyle... but I had a hard time actually doing it. Then I found this lifestyle change program. I enjoy the program because I have met many people who also struggle with diet and exercise."

WHAT IS MEDICARE DPP?

Medicare DPP is a **lifestyle change program** backed by years of research and recognized by the Centers for Disease Control and Prevention (CDC).

It is covered by Medicare Part B for people with prediabetes who are **overweight**. Prediabetes is sometimes called high blood sugar.

Covered programs are **proven to lower the risk of type 2 diabetes** by more than 70% for participants 60 years or older who follow the program and lose 5% to 7% of their body weight.

↓ 70% LOWER RISK OF TYPE 2 DIABETES

Benefits of the Program



At no cost, you'll get tips to help you **make lasting healthy changes**, from eating healthier to getting more physical activity and managing stress.



You will gain **support from people with similar goals** and challenges who will help you overcome obstacles and celebrate successes.



With the changes you'll make to your diet and physical activity, you may have **more energy to do the things you love**.



You may also be able to manage other conditions like high blood pressure and high cholesterol with **fewer medications**.*

*Talk to your health care provider before making any changes to your medication.

Program Details



Medicare DPP uses a **CDC-approved curriculum** and is led by **trained lifestyle coaches**, many of whom are dietitians, fitness coaches, or diabetes educators.



When you join Medicare DPP, **you'll get a year-long program** to support your goal of improving your health and preventing type 2 diabetes.



You'll attend **weekly 1-hour core sessions for up to 6 months** and then monthly sessions for the rest of the year to help your new, healthy habits stick and keep you from slipping back into old habits.



There are **no out-of-pocket costs** for participants with prediabetes who are enrolled in Medicare Part B.

Find Out If the Program Is Right for You

Talk to your health care provider to find out if you have prediabetes.

Learn more about Medicare DPP to see if the lifestyle change program is right for you.

go.cms.gov/mdpp

DPP Brochure for Non-Medicare Patients

The PreventT2 lifestyle change program is part of the National Diabetes Prevention Program, led by the Centers for Disease Control and Prevention (CDC). This proven program can help you make modest lifestyle changes and cut your risk of type 2 diabetes by more than half.

Take this form to a health care provider. Then take the completed form to a PreventT2 program near you.

PreventT2 Program
RECOMMENDATION FORM

I recommend my patient,

(First Name) (M.) (Last Name)

participate in the PreventT2 lifestyle change program offered by [Missoula County Health Department Organization] based on the following eligibility criteria.

- ☒ 18 years or older BMI $\geq 25\text{kg/m}^2$ (≥ 23 if Asian)
- ☒ No previous diagnosis of type 1 or type 2 diabetes
- ☒ Diagnosis of prediabetes within the past year or GDM based on (check one or more)
 - ☐ HbA1C: 5.7%-6.4%
 - ☐ Fasting plasma glucose: 100-125 mg/dL
 - ☐ 2-hour plasma glucose (after a 75 gm glucose load): 140-199 mg/dL
 - ☐ Previous diagnosis of GDM (may be self-reported)
- ☒ Cannot be pregnant at time of enrollment

Provider Signature _____ Date _____

Provider Name: _____

Address: _____

Phone: _____

Make a copy and give the completed form to the patient, who may contact this local program for more information and enrollment.

Missoula County Health Department
406-250-4935

You Can Prevent
Type 2 Diabetes
with the
PreventT2 Program



PREVENTT2
A PROVEN PROGRAM TO PREVENT TYPE 2 DIABETES

PREVENTT2 OFFICE
NATIONAL DIABETES PREVENTION PROGRAM
1110 N. 1ST AVENUE, 1ST FLOOR, SUITE 101
DENVER, CO 80202

→ PREVENT TYPE 2 DIABETES WITH THE PreventT2 PROGRAM

If you have prediabetes or other risk factors for type 2 diabetes, it's time to take charge of your health. The PreventT2 lifestyle change program can help you make lasting changes to prevent type 2 diabetes.

WITH THE PreventT2 PROGRAM YOU GET:

- A CDC-approved curriculum
- The skills you need to lose weight, be more physically active, and manage stress
- A trained lifestyle coach to guide and encourage you
- Support from other participants with the same goals as you — and fun
- A year-long program with weekly meetings for the first 6 months, then once or twice a month for the second 6 months

→ PreventT2 IS IN YOUR COMMUNITY

[Insert local program details such as locations; contact name, phone and/or URL; schedules; cost, and enrollment information.]

Some insurance plans will cover the cost for PreventT2. Check with your insurance provider to see if PreventT2 is covered. [If your program offers scholarships or other ways to reduce cost, include that information here.]

→ PREDIABETES CAN LEAD TO TYPE 2 DIABETES

One out of three American adults has prediabetes, and most of them do not know it. Having prediabetes means your blood glucose (sugar) level is higher than normal but not high enough to be diagnosed as diabetes. This raises your risk of type 2 diabetes, heart disease, and stroke.

Without weight loss or moderate physical activity, many people with prediabetes can develop type 2 diabetes within 5 years. Type 2 diabetes is a serious condition that can lead to health issues such as heart attack; stroke; blindness; kidney failure; or loss of toes, feet, or legs.

The lifestyle changes you make in the PreventT2 program will help you prevent or delay type 2 diabetes.

YOU MAY HAVE PREDIABETES AND BE AT RISK FOR TYPE 2 DIABETES IF YOU:

- Are 45 years of age or older
- Are overweight
- Have a family history of type 2 diabetes
- Are physically active fewer than 3 times per week
- Ever had diabetes while pregnant (gestational diabetes) or gave birth to a baby that weighed more than 9 pounds

→ MAKE A CHANGE — START TODAY!

If you think you may be at risk for prediabetes and type 2 diabetes:

- » Take this brochure to a health care provider.
 - Ask to be tested for prediabetes. The health care provider may do a simple blood test.
 - Ask the health care provider to fill out the Recommendation Form on the back of this brochure.
 - Take the completed form to a program near you. To find a program, call or visit us on the web today.
- » If you don't have a health care provider, call us to find out if you qualify for the program.
- » Take the "Could You Have Prediabetes?" online quiz at: www.cdc.gov/PreventT2. If your score shows you are at high risk for prediabetes, talk to your health care provider or contact our program.

Call or visit us on the web today!



APPENDIX F

MEDICAL CLEARANCE FORM-ORIGINAL WORKFLOW

**MEDICAL CLEARANCE
FORM
Montana Diabetes**



**AND REFERRAL
Prevention Program**

Patient Information

Today's Date: _____

____/____/____

Name: _____

Date of Birth: _____

Primary Phone: _____ - _____ - _____

Primary Insurance: _____

Physician Name: _____

If Medicaid, 9-digit Client ID (Medicaid ID/Recipient Original ID): _____

Please complete all criteria that pertain to the patient

Medical Eligibility Criteria

1. Age 18 years or over
2. Overweight or Obese (BMI ≥ 25)
3. Additional qualifying criteria (at least one)
 - a. High Blood Pressure
(Eligible if $\geq 130/80$ mmHg or taking blood pressure control medication)
 - b. Dyslipidemia
(Eligible if HDL < 50 mg/dL for women or < 40 mg/dL for men, LDL ≥ 130 mg/dL, Triglycerides ≥ 200 mg/dL, or taking lipid control medication)
 - c. Diagnosis of Pre-Diabetes
 - d. Abnormal Glucose
(Eligible if fasting plasma glucose is 100-125 mg/dL (IFG), or A1C 5.7-6.4%)
 - e. History of Gestational Diabetes

PCP Name: _____

Phone: _____

Medical History

1. Does patient take medication for these conditions:
 - a. High cholesterol/triglycerides yes/no
 - b. Abnormal glucose yes/no
 - c. Hypertension yes/no
2. Lab results within the past 12 months
 - a. HDL Cholesterol _____ date _____
 - b. LDL Cholesterol _____ date _____
 - c. Triglycerides _____ date _____
 - d. Fasting Blood Glucose _____ date _____ or A1C _____ date _____
 - e. Blood Pressure _____ date _____
3. Height _____ Weight _____ BMI _____ date _____
4. Diagnosed with arthritis yes/no (please circle one)
5. Diagnosed with diabetes yes/no (please circle one)

I have reviewed the medical eligibility information above and wish to refer this patient to the Diabetes Prevention Program on that basis. Please email or fax to Courtney Chase cchase@missoulacounty.us

Referring Provider Signature (required): _____ **Date:** _____

Fax: 406-258-4906 **Phone:** 406-258-4935 301 West Alder Street Missoula, Mt 59802



Last updated 02/06/19

DPP Notification Form- DPP Modified Workflow to Replace Medical Clearance Form

Notification to Diabetes Prevention Program

To

Courtney Chase,
Diabetes Prevention Program Coordinator
Missoula City-County Health Department
301 W. Alder, Missoula, MT 59802
Phone: 406-258-4935
Fax: 406-258-4906

I am interested in the Diabetes Prevention Program.
You may contact me via the phone provided below for further follow-up and
referral. Thank you so much.

Phone: _____

Name (Print): _____

Signature: _____

Date: _____

APPENDIX G

WARM HANDOFF LETTER FOR PCPS—ORIGINAL WORKFLOW

Dear Provider,

We are referring your patient, _____ DOB: _____ (MM/DD/YY), to a local Diabetes Prevention Program (DPP) listed below as we found that he/she may benefit from it. The evidence showed that the DPP could prevent or delay overt diabetes. Please follow up and keep motivating your patient to enroll in the DPP. The DPP program is expected to contact your clinic for further follow up on your patient as well. Thank you so much.

Diabetes Prevention Program-Missoula City-County Health Department

Courtney Chase, Program Coordinator

Address: 301 W. Alder, Missoula, MT 59802

Phone: 406-258-4935 (W)

Fax: 406-258-4906

Hospitalists of Community Medical Center

Warm Handoff Letter to PCP for Patient Agree to Setup the Referral-Modified Workflow

Dear Provider,

We found that your patient, _____

DOB: _____ (MM/DD/YY), is at higher risk to develop diabetes. We have talked about

the Diabetes Prevention Program (DPP) listed below with your patient and (s)he has showed

interest in this program. The DPP is expected to contact your clinic for further follow up on the

referral process. The evidence showed that the DPP could prevent or delay overt diabetes.

Please follow up and keep motivating your patient to be enrolled into the DPP. Thank you so much.

Diabetes Prevention Program-Missoula City-County Health Department

Courtney Chase, Program Coordinator

Address: 301 W. Alder, Missoula, MT 59802

Phone: 406-258-4935 (W)

Fax: 406-258-4906

Community Medical Center

Rashelle Johns, Dietician

2827 Fort Missoula Rd.

Missoula, MT 59804

Phone: 406-327-4131

Fax: 406-327-4176

Warm Handoff Letter to PCP for Patient Refused the Referral-Modified Workflow

Dear Provider,

We are discharging your patient, _____

DOB: _____ (MM/DD/YY), to your care. We found that (s)he is eligible for Diabetes Prevention Program (DPP); however, (s)he declined at this time. The evidence showed that the DPP could prevent or delay overt diabetes. AMA also suggest *using glycemic screening services and glycemic referring services in your population health improvement activities (IAs) for your Medicare Merit-based Incentive Payment System (MIPS) when you order lab work to screen prediabetes and refer your patient to DPP.*

Please follow up and keep motivating your patient to consider to be enrolled in the DPP. Should you have any questions regarding the referral, you may contact the DPP listed below. Thank you so much.

Diabetes Prevention Program-Missoula County Health Department

Courtney Chase, Program Coordinator

Address: 301 W. Alder, Missoula, MT 59802

Phone: 406-258-4935 (W)

Fax: 406-258-4906

Community Medical Center

Rashelle Johns, Dietician

2827 Fort Missoula Rd.

Missoula, MT 59804

Phone: 406-327-4131

Fax: 406-327-4176

APPENDIX H

LOG SHEET FOR PROJECT SITE

[illegible]

APPENDIX I

BONDING LETTER FOR DPP TO PCP-ORIGINAL WORKFLOW

Dear Provider,

I recently received a referral of your patient, _____
DOB (MM/DD/YY): _____, from a hospitalist of Community Medical Center to our Diabetes Prevention Program (DPP). Our program is CDC recognized and Medicare qualified. Evidence showed that DPP could prevent or delay overt diabetes. AMA also suggest *using glycemic screening services and glycemic referring services in your population health improvement activities (IAs) for your Medicare Merit-based Incentive Payment System (MIPS) when you order lab work to screen prediabetes and refer your patient to DPP.*

I will be in touch with you if further information needed and giving you update on your patient's progression once he/she is enrolled. Please follow up with your patients and keep motivating them to enroll to the DPP. If you have any question regarding the referral or the criteria to refer your patients please feel free to contact me.

Best Regards,

Courtney Chase,
Diabetes Prevention Program Coordinator
Missoula City-County Health Department
301 W. Alder, Missoula, MT 59802
Phone: 406-258-4935
Fax: 406-258-4906

Bonding Letter from the DPP to PCPs -Modified Workflow

Dear Provider,

I recently got a notification that your patient, _____, is interested in our Diabetes Prevention Program (DPP). Our program is CDC recognized and Medicare qualified. Evidence showed that DPP could prevent or delay overt diabetes. AMA also suggest *using glycemic screening services and glycemic referring services in your population health improvement activities (IAs) for your Medicare Merit-based Incentive Payment System (MIPS) when you order lab work to screen prediabetes and refer your patient to DPP.*

I am in the process to get the Release of Information from your patient and will be in touch with you for further information needed to complete the referral process and giving you update on your patient's progression once he/she is enrolled. Please follow up with your patient and keep motivating them to be enrolled into the DPP. If you have any questions regarding the referral or the criteria to refer your other patients, please feel free to contact me.

Best Regards,

Courtney Chase,
Diabetes Prevention Program Coordinator
Missoula City-County Health Department
301 W. Alder, Missoula, MT 59802
Phone: 406-258-4935
Fax: 406-258-4906

APPENDIX J

LOG SHEET FOR DPP SITE

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