A Quality Improvement Project to Develop a Policy Change to Improve the Dissemination of Telehealth Diabetes Self-Management Education in Rural Areas

Greg Larson

The College of St. Scholastica

NSG 8207

Dr. Ferry

July 17, 2022

Table of Contents

Abstract

Rural populations have higher rates of endocrine disorders and related comorbidities than non-rural areas. Rural populations face barriers in accessing healthcare, including fewer healthcare providers, higher rates of underinsured and uninsured, and fewer transportation options for patients to get to their clinic. Telehealth is a technological tool that can provide healthcare services to rural populations. Underserved populations such as rural populations have limited access to health care services and knowledge on the management of their diabetic disease process. The use of telehealth and telemedicine services such as live video conferencing, chatting, texting, and mobile phone applications are used to deliver health care services to an underserved population. Diabetic self-management education (DSME) . This DNP project will acquire input from diabetic experts on what policy changes should be made to effectively get the information to their patients in rural areas and get assurances that using telehealth is an effective way to disseminate DSME. A pre-questionnaire will be sent to diabetic experts pertaining to a proposed policy evaluation from the experts. The information from the pre-questionnaire will be used to determine what post-questionnaire questions will be asked of the experts. The information will determine if the organization is ok with the current telehealth policies or trying to improve policies that are positive for the patient and the community.

Keywords: Undeserved population, rural areas, telehealth services, endocrine disorders, DSME education, telehealth policy

A Quality Improvement Project to Develop Policy Changes to Improve the Dissemination of Telehealth Diabetes Self-Management Education in Rural Areas

Rural populations have higher rates of endocrine disorders and related comorbidities than non-rural areas (Klee, 2020). Rural populations face barriers in accessing healthcare, including fewer healthcare providers, higher rates of underinsured and uninsured, and fewer transportation options for patients to get to their clinic (Klee, 2020). Telehealth is a technological tool that can provide healthcare services to rural populations. Telehealth can support and promote long-distance technology to provide health-related education.

Telehealth is defined differently by virtually all states and within federal governmental agencies. Telehealth brings the services directly to the patient, improving the way patients and families interact with providers and their healthcare organizations. According to Powers et al. (2020), diabetic patients who completed diabetes self-management education (DSME) of more than 10 hours over a 6–12-month timeframe had reductions in A1c levels (decrease of 0.57%) and mortality rates. Telehealth has been viewed as a means to assist rural populations with their diabetic management healthcare needs (Haas et al., 2014). Policymakers are contemplating how to leverage the potential of telehealth while ensuring users have the appropriate use, safety, and health outcomes. Current telehealth policy is based on COVID-19 pandemic conditions for coverage and reimbursements, licensure, and safety and security (CDC, 2020).

Problem Statement

According to the center for disease control and prevention (CDC) (2020), 34.2 million United States (U.S.) residents were diagnosed with diabetes in 2020, and the prevalence of type 2 diabetes is 17.6% higher in rural populations than in urban populations. Additionally, patients in rural areas recorded a low rate of DSME services compared to the urban population and less than 5% or Medicare beneficiaries and 6.8% of privately insured people diagnosed with diabetes

utilize DSME services (ADCES, 2021). Diabetes self-management education (DSME) is a continuous education process of promoting the knowledge, skill, and ability necessary for diabetes self-care. DSME is guided by evidence-based standards, incorporating the needs, goals, and life experiences of diabetic patients. The objectives of DSME are to "support informed decision-making, self-care behaviors, problem-solving and active collaboration" with the healthcare team improving the patients' clinical outcomes, health status, and quality of life (National institute of diabetes, digestive, and kidney diseases, 2017).

Approximately 38% of the rural districts in the U.S. have access to the DSME services (CDC, 2020). The CDC (2020) reports that DSME provides patients with evidence-based education, teaching patients the proper knowledge and skills to self-manage their diabetes. Telehealth can be used for diabetic education, management, and disease monitoring (Gonder-Frederick, 2016). DSME, medication adherence, and specialty care consultations are vital supportive measures that telehealth services provide. Telecommunication technologies can support rural populations and overcome rural barriers to health care access and improve care.

Diabetic self-management education (DSME) has become more technology-dependent, with more advancement towards automated glucose control (Gonder-Frederick et al., 2016). DSME participation improves self-management behaviors leading to improved glycemic control and decreased rates of diabetic complications (Hunt et al., 2018). According to Gal et al. (2018), telehealth services provide increased access to DSME and continuous glucose monitoring (CGM), which empowers patients to increase their self-management skills. The interaction between a positive patient experience and successful technology use will increase the adoption of telehealth services (Gonder-Frederick et al., 2016). According to Gal et al. (2018), telehealth

services provide increased access to DSME and continuous glucose monitoring (CGM), which empowers patients to increase their self-management skills.

Despite the advancement and increase in the use of technology, some barriers hinder the full implementation of telehealth services in rural areas. Electronic communication means any information that is sent between the healthcare provider and the patient which could be over an internet connection or other electronic device. The services provided to patients, for the purposes of this project, are DSME provided over the internet to a rural diabetic patient at their home using their computer or smart phone. The patient must have the ability to receive electronic information through the internet so DSME can be provided. Healthcare providers require a Telehealth platform that must be purchased to provide telehealth services. Internet telehealth platform providers can be purchased for healthcare providers to deliver telehealth services. The platforms can provide high quality telehealth visits from the providers clinic to the patient's home over the internet. The primary mode of service delivery from the platforms is through a secured proprietary mobile-responsive web-based telehealth platform that diabetic patients can access from their computer, tablet, or smartphone. The internet telehealth platforms can keep track of services delivered to patients, so the healthcare organization can be reimbursed for their services. Telehealth is a broader term that encompasses the use of electronic information and telecommunication technology supporting long-distance clinical healthcare, patient education, public health, and health administration (Fitzner et al., 2014).

Patients may have limited access to smartphones and high-speed broadband internet connections needed to get an adequate telehealth service connection in rural areas (Gal et al., 2018). In 2019, 71% of rural populations reported having a smartphone versus 83% of urban residents and remote monitoring systems access are also decreased because of the lack of

technology (CDC, 2020). According to the CDC (2020), approximately 60% of residents living in rural areas have access to telehealth services compared to 95% of urban populations. The CDC (2020) reports that 62% of rural populations do not have DSME services.

Telehealth technology also enables the remote diagnoses and evaluation of patients detecting fluctuations in the patients' medical condition at home so medications or therapies can be adjusted accordingly (Fitzner et al., 2014). Telehealth refers to caring for patients over a distance and is a low resource modality meaning the provider and the patient needs a computer with a microphone and camera, smartphone, or tablet. Telemedicine refers to the use of electronic communications and software that provides services to patients without visiting an in-person clinic (Fitzner et al., 2014). Telemedicine offers the users of this service the ability of the patient to not have to drive to their healthcare clinic or provider's office to receive healthcare services such as DSME. DSME services can be accessed from anywhere and at the convenience of the patient rather than having to travel to the healthcare providers clinic for each DSME lesson.

According to Fitzner et al. (2014), telemedicine technology is often used for follow-up visits, chronic conditions management, medication management, and specialist consultations that can provide a secure video and audio connection (Fitzner et al., 2014). Information can be transferred through secure portals to other healthcare providers and specialists in a matter of seconds versus sending them by courier or private carriers. Depending on the image or diagnostic evaluation it may be prudent for the specialist to discuss the results timely which can be completed using telehealth services. Medical imaging includes CT scans, X-rays, MRI scans, and ultrasound images which can be transmitted via telemedicine services. Medical diagnosis

and evaluations can be sent by telemedicine services to another healthcare provider or specialist and occurs most often when EHR computer systems are not compatible with each other.

Follow-up visits, chronic conditions management, medication management, and specialist consultations are a vital part of diabetes management, and this management can be provided by telehealth services. A follow-up visit and medication management can be as simple as making sure that an oral or injectable medication is working properly. A telehealth visit can be a good alternative to having the patient travel to the clinic for a 15-minute office visit when they may have to travel for a few hours and get transportation services setup for the in-person office visit. For diabetic patients, it is imperative for these patients to appropriately manage monitoring of diabetic patients due to the nature of the disease and using telehealth for the delivery of DSME services will give them information about diet adherence, activity coaching, blood sugar control and HgA1c levels.

The Centers for Medicare and Medicaid Services (CMS) provides reimbursement for Medicare beneficiaries for diabetes self-management training (DSMT) which is for provider training. According to CMS (2020), DSMT is an accreditation program, and this training must meet certain standards so the organization disseminating DSME is a certified DSMT provider. A "certified provider" is defined as a "physician, or other individual or entity designated by the Secretary" in which payment is made to the healthcare organization (CMS, 2020). DSMT ensures that the educators that are providing educational services to diabetic patients that meet a high-quality standard. The National Diabetes Advisory Board sets the standards for DSMT training and recognizing that a provider (Physician, NP, or PA), individual, or entity meets the standards within the healthcare organization to provide DSME services. This is an important distinction because certain DSMT providers are the only people that can provide DSME services

so the organization can be reimbursed. DSME is typically delivered in person or in small group settings at the patient's clinic. DSME can be delivered in rural locations using telehealth and meet the needs of individual participants, but policy guidelines continue to be very restrictive for reimbursing organizations. According to the National Standards (CDC, 2020) for DSME, the curriculum elements must include topics such as healthy eating, physical activity, medication usage, and problem-solving tools.

Reimbursement rates for DSME services vary from state-to-state and have different definitions of coverage from Medicare and Medicaid beneficiaries. According to the CDC (2020), the Association of Diabetes Care and Education Specialists (ADCES) and the American Diabetes Association (ADA) are the only authorized organizations to determine whether DSME services are meeting the required evidence-based standards of the CMS. According to CMS (2020), DSME is a critical element of care for rural populations with diabetes and the National Standards are designed to define quality DSME, support, and assist diabetic educators to provide an evidence-based education. The National Standards are designed for educators in solo practice and in large healthcare organizations programs. The National Standards are reviewed every five years by key stakeholders and experts within the diabetic education community based on the available evidence and expert consultation. According to the ADCES (2021), there are six sites (through 3/21/21) in northern Minnesota that are accredited DSME program sites and not all of them offer telehealth services. An accredited or recognized DSME service, meeting the National Standards, ensures that a quality education is being provided to diabetic patients, so the services are eligible for reimbursement from Medicare, private health plans, and some state Medicaid agencies.

The National Standards for DSME services include ten standards. The National Standards for DSME services are a critical element of care for people diagnosed with diabetes and people that are at risk of developing diabetes (Haas et al., 2014). According to the ADA (The National Standard #4: Delivery and Design of DSME Services, discusses delivery options for DSME services through virtual, telehealth, telephone, text messaging, and web-based/mobile phone applications. Medicare and Medicaid will cover up to 10 hours (one hour individual and nine hours of group training) of diabetic education in the first year of a diabetes diagnosis. After the first year CMS will pay for one hour of DSME services each year. Patients that are living in rural areas and have mobility restrictions due to comorbidities and have healthcare insurance covered by Medicaid often have their "originating" site, being their home, not covered by Medicaid. Hennepin Healthcare provides patients with DSME education, but it tries to get the patient to the facility rather than providing the education through telehealth services. Private insurance companies vary from state to state on their coverage of DSME services in the clinic setting.

Problem Background

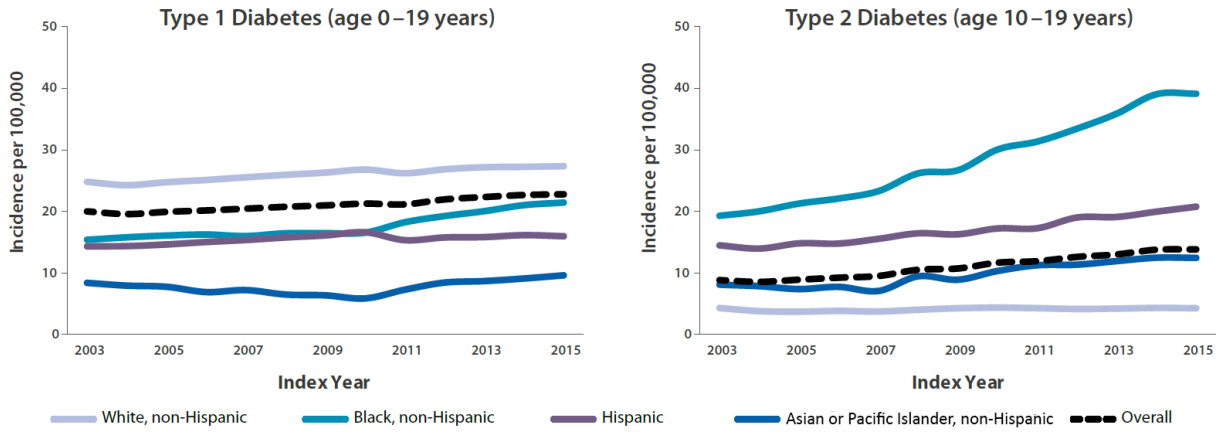
The CDC (2020) initiated the Telemedicine for Reach, Education, Access, and Treatment (TREAT) model for diabetic care for patients in rural areas and reported a 100% satisfaction rate among patients who kept their glucose levels within normal ranges using this model. Patients can use smartphones, tablets, laptops, and desktop computers to use telehealth applications and link them with a practitioner to assist them with managing their chronic condition of diabetes and receive DSME (Gajarawala & Pelkowski, 2020). According to Keegan et al. (2020), over 425 million people live with diabetes worldwide, and 1.5 million new cases are diagnosed with diabetes. The CDC (2020) reports that 8.2 percent of the U.S. population in 2018 were diagnosed

with diabetes each year with low-income or at poverty levels, and minority populations (American Indian, African American, Hispanic ethnicity, and Asian populations) being twice as likely to be diagnosed with diabetes. According to the U.S. Department of Health and Human Services (2017), poverty guidelines include household incomes below $24,600/year for a family of four and below $12,060 for a single person.

According to the Minnesota Department of Health (n.d.), poverty affects health, and one in three people that identify as Native American or African American in Minnesota are in poverty. Minnesota ranks as the seventh worst state for Native American people diagnosed with diabetes in the United States (Centers for Disease Control and Prevention, 2021). Nearly half of all Native American people living in Minnesota have been diagnosed with diabetes. Racial and ethnic minorities have a higher rate of diabetes, worse diabetic control, and higher comorbidity rates (Centers for Disease Control and Prevention, 2021). African Americans, Native Americans, and Hispanics/Latinos in Minnesota diagnosed with diabetes were 2-5 times greater than non-Hispanic whites to have diabetes as an underlying cause of death in Minnesota (Centers for Disease Control and Prevention, 2021). Racial and ethnic disparities with diabetes complications are significantly made worse because people of color living in rural areas lack preventive care, the ability to acquire diabetic supplies and diabetic medications.

Hispanics and Asians are the fastest growing minority group in nonmetro areas because of the demand for low-skilled workers in rural communities. Minority populations tend to experience higher rates of poverty because of low paying rural jobs, also straining social service programs to assist them with affordable healthcare and housing. Rural America has worse health outcomes because of higher rates of poverty, chronic diseases, and fragmented healthcare systems.

Trends in Incidence of Type 1 and Type 2 diabetes, Overall and by Race and Ethnicity, 2002-2015



(CDC, n.d.)

The rationale for conducting the quality improvement project is to help patients diagnosed with diabetes in rural areas have access to medical care through telehealth services. Telehealth services reduce the barriers associated with care by providing patients with care when they need it instead of having to travel to the clinic or office. Patients may not have the transportation resources to travel to appointments and older or less mobile patients may not have family or friends that can drive them to appointments. The patients can remain in their homes to receive care as traveling can be uncomfortable or even painful. Telehealth services can help them feel more independent according to the CDC (2020). It gives the patient living in a rural area the opportunity to receive the services in the convenience of their home and not have to travel long distances to their healthcare providers office. The use of telehealth is associated with merits such as improved access to care, efficiency, quality of health services, cost-effectiveness, reduced long-distance travel to medical facilities, and increased patient satisfaction. According to the CDC (2020), DSME services have been shown to improve diabetic patients' outcomes and quality of life provided that the services be convenient to the patient.

Due to the movement restrictions imposed by the government to mitigate the spread and risk of COVID-19, the use of telehealth will help the patients access to care without in-person visits to the hospital (Gajarawal & Pelkowski, 2021). Despite the benefits of telehealth, barriers such as reimbursements, internet connection, and legal regulation hinder the implementation of telemedicine in underserved populations (Gajarawal & Pelkowski, 2021). Telehealth services face legal and regulatory hurdles because of the diverse variations in rules, regulations, and guidelines for practice. According to Gajarawal and Pelkowski (2021), liability and legal issues are potential litigation prone areas for providers because state and federal policies are not uniform. Uniformity of state and federal policy regulations will reduce the barriers for the expansion of telehealth services.

The variability of legal and regulatory hurdles can be confusing for providers such as multistate licensure so providers can provide services across state lines. Providers must obtain and keep their licensure up to date to provide telehealth services in multiple states. Unfortunately, this does not apply to NPs because they are licensed under state boards of nursing, not under a medical board like physicians or PAs. According to the Minnesota Board of Nursing (n.d.) site, telenursing across state borders requires that the patient be in Minnesota. For the NP to practice across state lines they would need a multistate license. The project aims to address and propose a new policy to decrease the barriers associated with telehealth services for DSME education in rural areas. A policy change that should be made is to reduce the access barriers for in state and out-of-state providers by increasing telehealth services to rural communities for individuals with diabetes that need DSME services who live in rural areas. Another policy change that would be effective for the dissemination of DSME services would be

the loosening of restrictions concerning what qualifies as a reimbursable service such as allowing audio-only or text-based services.

PICOT Question

How will the introduction of a policy to provide Diabetic Self -Management Education through telehealth services (I) in adult patients between 18 – 70 years with type 2 diabetes residing in rural areas impact healthcare providers (P) response to diabetic education practices (O) over a period of six weeks (T) as compared to current practices (C)?

Literature Search

The literature search methods included searching for information on telehealth policy and education, specifically DSME. The search was conducted using the following databases through the College of St. Scholastica: CINAHL, Solar, PubMed, and Cochrane. Search words include the following: *Telehealth and/or telemedicine, telehealth policy, DSME, diabetes, rural telehealth, remote diabetes care, diabetes and telehealth/telemedicine, and rural areas/communities*. The publication years of the search were 2014 to 2022. The writer attempted an exhaustive search for peer-reviewed evidence-based literature for this DNP project.

Literature Matrix Design

The literature matrix design includes seven headings: Reference; Purpose/Question; Design; Sample; Intervention; Results; Notes. The purpose or question heading shows how the reference relates to the topic. The design heading relates to what type of study was conducted for the article. The sample heading is how many participants were included in the study or if it is a qualitative review of articles, what populations were studied. The intervention heading includes information on what data was collected from each group studied. The results heading includes

what the authors found based on the results of their study. The notes heading includes pertinent information relating to writers DNP project.

Literature Review

The goal of the Healthy People 2030 project is to raise the number of diabetes patients who receive formal education from 51.7 percent to 55.2 percent of those aged 18 and above (Office of Disease Prevention and Health Promotion [ODPHP], 2021). Currently, only 51.7% of patients have received DSME education (ODPHP, 2021). DSME education helps patients and families gain the skills, knowledge base, and ability to self-manage their condition. DSME is a crucial component to improving the health outcomes in patients diagnosed with diabetes.

According to the CDC (2020), DSME reimbursement rates vary by the payer source (private insurance company, employer, or CMS) for in-person and telehealth delivery because it only applies to specific disease management, such as hypertension and respiratory conditions. Current health plans may provide a telephone coach for DSME but that does not meet the national standards for DSME. Recognition or accreditation for the organization is required for reimbursement by Medicare for telehealth DSME. Medicaid has standards that are state specific for telehealth services, Minnesota requires a real-time two-way, interactive audio and visual communication for education or care management of the patient's healthcare.

DSME provides information and the skills necessary for patients to manage their diabetes (Davis et al., 2022). DSME can be tailored to the individual needs, goals, and life experiences that the patient requires (Davis et al., 2022). According to the CDC (2020), the DSME program teaches the patient how to eat healthy meals, exercise, monitor blood glucose levels, take medications, solve problems, improve their health, other health condition reduction, emotional stability, and improve their quality of life (Fitzner et al., 2014). It is important for the newly

diagnosed diabetic to receive DSME services, so they are off to a good start and reduce the risk of other health conditions (Gal et al., 2020). Diabetic patients should receive DSME at three other times; if any health complications arise, changes in care, and yearly follow-up visits (Gajarawal & Pelkowski, 2021).

Research shows that self-monitoring of the patient's glucose level can reduce their A1c level within six months (ODPHP, 2021). In 2017, 89% of adults aged 18 years and older performed self-monitoring of their blood glucose level a minimum of once per day (ODPHP, 2021). The Healthy People 2030 project targets 94.4 percent of patients to monitor their blood glucose level at least once a day (ODPHP, 2021). This initiative aims to monitor their glucose levels more often per day because poorly controlled or untreated diabetes can lead to amputations, vision loss, kidney damage, and cardiac complications.

Similarly, patients can also use telehealth services to inquire about their blood glucose levels, prescription modifications, or the need for immediate medical attention. Telehealth services could help patients who live in remote areas avoid hospital admissions, emergency room visits, and other barriers to care. Additionally, patients with transportation or mobility challenges may be unable to attend office appointments. Thus, telehealth services can effectively accomplish DSME education and patient monitoring to attend to underserved and vulnerable rural populations.

The use of electronic information and telecommunication services to promote long-distance healthcare, education, and public health. Identifying the telehealth technologies that meet the needs of the rural diabetic population for the dissemination of DSME are key to their implementation. Telehealth technologies used in rural areas can reduce the challenges and

burdens patients encounter, such as transportation issues. DSME can be disseminated effectively to diabetic patients through telehealth technologies (Hunt et al., 2018).

Telehealth services have become more prominent during the COVID pandemic and providers sought to decrease their clinical contact. Patients can be given DSME information from anywhere, such as their home or office, and not have to go to the clinic for every DSME educational session. This is what telehealth services offer to disseminate this valuable information for diabetic patients to self-manage their diabetes. Patients can login to the DSME educational platform from their home and go through the information. This would not be possible if the telehealth services platform and broadband internet service were not available.

The literature that is currently available, shows the benefits of DSME but it has been severely underutilized. Traditionally, DSME services have been provided at a clinic location either individually or in group settings. Medicaid programs are under state control and are subject to state telehealth laws and policies. Telehealth was limited to rural or remote areas populations but is increasing in urban areas. According to the ADCES (2021), Medicare has more restrictions than Medicaid or private commercial healthcare insurance companies, but reimbursements include only when the patient is in a rural setting. This is a positive step in rural diabetic DSME telehealth education, but the ADCES is concerned that this may end once the COVID-19 pandemic becomes more controlled. According to the CDC (2020), Medicaid has no restrictions for state reimbursements of telehealth services but only covers certain home-based telehealth services. The originating site (where the patient lives) requirements for Medicare, Medicaid, and commercial insurance reimbursements to providers should be eliminated entirely because federal policies will continue to be restricted in rural areas if policymakers do not continue to pay for services after the COVID-19 pandemic (Haas et al., 2014).

The Census Bureau (2020) defines rural as any population, housing, or territory that is not in an urban area. Urban areas consist of populations of 50,000 or more people and "urban clusters" consisting of at least 2,500 people and less than 50,000. The Census Bureau (2020) states that "rural" encompasses all populations, housing, and territory that is not included within an urban populated area. Whatever is not urban is considered rural.

According to North (2021), regulatory telehealth policy changes should be reviewed so they focus on health equity, supporting primary care providers, improve health outcomes, coordinate care, and protect patient privacy because this will improve the patient's quality of life. Parity between states, so providers can offer telehealth services across state lines, and offer comprehensive telehealth reimbursements for all healthcare coverage (Bowen and Warner, 2021).

Legal policies pose a significant barrier to telehealth despite the plethora of opportunities for healthcare delivery. Medicare, in most cases, limits telehealth to rural or underserved populations (Hunt, 2018). Not all states have policies that offer telehealth services to rural and underserved areas in the United States (Ju, 2020). The CDC (2020) suggests that providers should check state laws prior to launching any telehealth or telemedicine services. According to Jiang et al. (2021), the use of a smartphone to disseminate DSME is an effective way to give diabetic patients self-management education, but this service is not covered by any telehealth policy.

The literature search has revealed information on policy changes that should occur after the COVID-19 pandemic to sustain the current level of reimbursement rates which can affect the clinic financially because they require proper infrastructure to deliver telehealth services, but policymakers are slow to make any changes permanent. Healthcare providers are reluctant to

invest in telehealth services without knowing that they will be properly reimbursed after creating a telehealth infrastructure, such as computers, training, and adequate Internet service, at their clinic and obtain the required licensing and training to offer these services.

Gap Analysis

Telehealth DSME delivery can be an ideal compromise for patients that live in rural areas rather than driving to their clinic for each DSME session. There are three risks and gaps that must be addressed for telehealth to be effective. The first component is that healthcare providers must be comfortable with telehealth technology. In June 2020, IQVIA surveyed 1,700 providers about telehealth and found that forty percent of them indicated that they were not comfortable with the current telehealth technology (ADCES, 2021). Providers are concerned about the policy barriers at the federal and state level because of low reimbursement rates, licensing, prescribing, credentialing, and privileges. Rural providers also have restrictions on where telehealth services can take place (geographically and the facility), limited number of providers who may bill for the services they provide, and allowing only video to be reimbursed (CMS, 2020).

The second component is that policies need to support telehealth services for DSME delivery. The United States healthcare system is a for-profit system, and providers and healthcare organizations need to generate sufficient revenue to support the use of telehealth because there are infrastructure expenses. Providers have expenses that must be covered such as a secure telehealth platform, malpractice insurance, licensing, HIPAA compliant, prescribing authority, credentialing, and privileging. COVID-19 has prompted temporary relief but not all commercial payers are reimbursing telehealth services at the same rate as in-person visits. Unfortunately, CMS has not made their reimbursement rates permanent for telehealth services. To maintain and sustain any program, value needs to be demonstrated and not only through the

patients' diabetic outcomes of the DSME education. If providers are not properly reimbursed for their services, they will not be able to sustain a telehealth service in their clinics. There is a significant cost of building and sustaining a telecommunication system which include the data management systems and medical professional training.

The third component of a policy change that needs further support from policymakers is expansion in the use of virtual sessions that are covered by CMS. CMS will not currently reimburse providers for an audio only format delivery of DSME services. According to Gajarawala and Pelkowski (2020), patients have a higher level of learning if the delivery of DSME includes a visual lesson with audio rather than just an audio only delivery of information. According to Kelley et al. (2020), community health centers (CHC) provide care to a high number of diabetic patients and the delivery of DSME services makes a significant difference in the outcome of the patient. The objective of the policy change is to provide rural diabetic populations the opportunity to receive high quality DSME education through telehealth services that is reimbursed by governmental agencies and private insurance carriers.

SWOT Analysis

The SWOT analysis stands for strengths, weaknesses, opportunities, and threats. The SWOT analysis for this policy project includes strong stakeholder support, policy changes that are evidence based, and analysis that supports the dissemination of DSME through telehealth services. The mission of this project is to reduce the barriers for diabetic patients, living in rural areas, and give them opportunity to receive DSME services through telehealth and improve their quality of life.

The strengths of this policy focused project include how telehealth services can meet the needs of diabetic patients with their DSME education. It can be patient focused and practical to

accommodate the needs of the patient in rural areas. Telehealth services can provide convenience and services to patients with limited mobility in rural areas where they don't have access to a local doctor or clinic. Patients can receive telehealth services, a real-time visit or education, from the convenience of their own residence using their computer or smartphone.

A strength from the Healthy People 2030 initiative is "Improve access to health services (AHS) by increasing the use of telehealth – AHS-R02" in rural populations (ODPHP, 2021). The Healthy People 2030 initiative aims to improve the populations' health by providing timely, high-quality telehealth services to assist patients in rural areas in accessing health care providers and improving communication (ODPHP, 2021). This objective is directly correlated to this project proposal to improve the quality of life for rural populations diagnosed with endocrine disorders.

Opportunities to expand the use of telehealth services and collaborate with all stakeholders including policymakers, IT personnel, Internet providers, and municipalities to get broadband to all rural areas will increase the dissemination of telehealth services. Collaboration between all stakeholders can bridge the gap between rural populations receiving and not receiving telehealth healthcare services. A collaborative telehealth services environment enables all healthcare needs such as education, specialist consultations, and providers the opportunity to serve rural populations irrespective of their geographic location.

The weaknesses include the access to telehealth delivery because of infrastructure needs and current policies for telehealth delivery. The broadband gap, or limited high-speed internet, could lead to health inequalities in rural areas. The U.S. Department of Agriculture (USDA) is sponsoring several programs that provide funds to rural state and local governments to improve and acquire facilities and equipment necessary to get broadband infrastructure to rural areas. The problem with this current USDA policy is that it is a loan and rural local governments may

not have the resources to pay back the loan, so they will not participate in the infrastructure improvements.

The threats include reimbursement rates ending after the pandemic and policymakers no longer continuing the current policies. Policymakers must standardize the rules and regulations of telemedicine. Some states have placed limits on the portability of telehealth related licensure across state lines requiring practitioners to acquire conditional licenses. Advanced Practice Nurses are required to contact their state regulatory agency practice policy to determine compensation for telehealth services as this process is regulated by each state. According to CMS, only accredited DSMT programs can bill for DSME services via telehealth but current policy states that it only applies during the COVID pandemic.

Diverse and Disparate Populations

Pekmezaris et al. (2020) indicated that over half of Hispanic/Latino people would develop type 2 diabetes in their lifetime. Type 2 diabetes is the leading cause of death due to blindness, hospitalizations, poor quality of life, and cardiovascular disease (Pekmezaris et al., 2020). In the U.S., the rate of diabetes for Hispanic/Latino males 65-74 years old is 31.1%, and Hispanic/Latino females are 32.6% (Pekmezaris et al., 2020). According to Pekmezaris et al. (2020), compared to Caucasians, Hispanic/Latino populations are at a 66% higher rate of acquiring type 2 diabetes and experience a 50-100% higher mortality rate because of their poorly managed diabetes (Pekmezaris et al., 2020). The Pekmezaris et al. (2020) acceptability and feasibility study concluded that telehealth technology services could be adapted for the underserved Hispanic/Latinos patients.

Pekmezaris et al. (2020) recommend the inclusion of rural populations from diverse ethnic backgrounds to assess technological innovations and adaptation to optimize telehealth

services. The U.S. Department of Health and Human Services (HHS) supports federal legislation that would support workforce strategies and disparities in rural underserved areas focused on recruiting health practitioners from low-income communities. The strategies will strengthen the workforce giving diverse ethnic populations in rural areas improved access to telehealth services and culturally appropriate care. DSME services can be provided in multilanguage formats over telehealth services which reduces the need for translators in the clinic setting ultimately lowering expenses for the clinic. According to Hunt et al. (2018), rural minority populations are less likely to use healthcare services because they do not have personnel that can communicate with them effectively if they do not speak their language. According to Gajarawala and Pelkowski (2020), rural minority populations are more likely to not have medical insurance because of decreased employment opportunities offered in rural areas which is especially true of Hispanic rural residents.

This project will assist in reducing health disparities with a comprehensive telehealth policy change and offer alternatives to deliver care to the rural populations in Minnesota. According to the CDC 2020), telehealth services can improve the patients' social determinants of health that affect the rural diabetic population's health, well-being, and quality of life.

Health Program

The use of telehealth services for the dissemination of DSME is a valuable tool that can be used for rural diabetic patients living in rural areas. The lack of education can significantly limit the patient's ability to self-manage their diabetes. Patients living in rural areas may not have the resources to travel to their clinic for every DSME session or follow up visit. Telehealth services can overcome these barriers. Telehealth services should be customized to the needs of each patient virtually depending on the device they are using such as a basic analog phone that

can only hear audio or a smart phone that can receive audio and video. This reduces the number of resources used in the clinic such as personnel to get the appropriate DSME materials for each patient and providing space for the patient in the clinic.

The health program being considered for this project is an intervention to improve DSME education dissemination to rural populations using telehealth services. DSME offers the patient a positive outcome towards their clinical, psychosocial, and behavioral aspects by teaching them about well-balanced meals, regular physical exercise, self-management, and empowerment to be actively managing their diabetes. The providers benefit because the patients are controlling their blood sugar levels, a1c levels are within normal ranges or improving, decreased comorbidities, and calls to the clinic are reduced because of the information the patient received from DSME. The more general concept of how telehealth services might improve communication between patients and clinicians can be examined and assessed as part of this project. Telehealth services can provide real-time interactive services between patients and physicians or practitioners from a remote location. Telehealth is a more cost-effective option than face-to-face contact because rural populations must travel longer distances to see a provider. According to Hunt et al. (2018), rural residents often must take time off from work because they must travel further for their healthcare appointments. Follow-up care for diabetic patients is an essential component of their quality of life.

Setting and Target Population

This DNP project will use the college in Duluth Minnesota as the primary organization. The college has a four-year DNP program, and the writer is seeking a DNP-FNP doctoral graduate degree. The college has a total of about 4,000 students enrolled annually with

approximately 900 students enrolled in a graduate program (College Factual, 2021). Duluth Minnesota is the main campus of the college with other locations around the state of Minnesota.

The project will not be using any data from rural diabetic patients. The inclusion criteria will be expert diabetic providers that use telehealth services to provide DSME to their patients. The exclusion criteria are expert diabetic providers that do not use telehealth services to provide DSME to their patients. The stakeholders are health care providers, ancillary staff, IT providers, telehealth platform providers, DSMT educators, and equipment suppliers.

Planning

Information from each diabetic expert will be obtained from a pre- and post-questionnaire on a proposed policy (Appendix D). The benefits of acquiring input from diabetic experts includes what policy changes should be made to effectively get the information to their patients in rural areas and obtaining assurances that using telehealth is an effective way to disseminate DSME. Based on patient annual diabetic exams and diagnostic results the diabetic experts will ascertain whether DSME services are effective in maintaining acceptable blood glucose levels and whether or not the educational components of DSME are beneficial for patients relative to lifestyle choices. The pre-questionnaire will include questions pertaining to a proposed policy evaluation from the experts. The information from the pre-questionnaire will be used to determine what post-questionnaire questions will be asked of the experts.

The post-questionnaire will be sent to the diabetic experts after the pre-questionnaire information is evaluated. The information will determine if the organization is satisfied with the current telehealth policies or are revising policies that are positive for the patient and the community. The questions will include how telehealth has impacted the organization whether positive or negative given the current COVID conditions. The post-questionnaire evaluation will

be conducted and shared with the diabetic experts to determine what the next steps should be to improve telehealth services in rural areas.

This quality improvement project involves utilizing telehealth services in rural areas to aid in the dissemination of DSME services. According to Park et al. (2018), the adoption of telehealth services such as chatting, live video, texting, and mobile apps was high among urban areas and high-income locations between 2013 to 2016 as opposed to underserved communities such as rural and low-income populations. Thus, the project aims at increasing telehealth services in rural populations to aid patients diagnosed with diabetes.

The DNP student will obtain a minimum of four diabetic experts and give each expert a pre- and post-questionnaire to develop an evidence-based protocol for a policy to support DSME through telehealth services in adult patients residing in rural areas. The diabetic experts that have agreed to participate in this project are three diabetic educators (two nurse practitioners and one nurse diabetic education specialist) with two major healthcare organizations in northern Minnesota, and a physician (endocrinologist) with the University of Minnesota. The nurse practitioners and the nurse are trained diabetic care and education specialists (DCES). By week six, review post-questionnaire responses from diabetic experts and determine any policy revisions that should be adopted.

Implementation

This project will use diabetic experts to evaluate, using pre- and post-questionnaires, a proposed policy written by the DNP student. The proposed policy is as follows: All diabetic patients living in rural areas will receive telehealth services for their DSME. The following are steps required to ensure effective implementation of the policy:

- Provide access to qualified health professionals at any time during telehealth DSME services
- Infrastructure improvements to rural areas broadband services
- Provide all options to disseminate DSME such as analog phone, smartphone, laptop, home computer, or office computers
- Continue Medicare, Medicaid, and private insurance companies, past the COVID pandemic, to continue adequate reimbursement rates
- Provide printed materials via mail, such as workbooks, to each diabetic patient to be used as an additional reference during their telehealth DSME education program

Rural diabetic patients may need access to specialists like endocrinologists to make medication changes or assist in making medical changes to assist the patient. Fast broadband service in rural communities continues to be a problem because many rural communities do not have the proper funding to build this infrastructure. According to the CDC (2020), current government policy states that diabetic patients may receive DSME at home only if there is a special need such as lack of transportation, functional limitation, or medical condition that prohibits the patient from getting to their clinic. The current telehealth policy does not extend past the COVID pandemic which could impact the dissemination of DSME in rural diabetic populations. Providing printed materials ahead of time when the patient is receiving DSME services through telehealth can give a reference to the patient at home.

Data Collection and Evaluation

The data collection procedure will commence after receiving institutional review board (IRB) approval. The project is associated with minimum risk. Data collected will include the

diabetic experts' answers to pre and post questionnaires. Data will be collected in three to five stages, pre-and post-questionnaires. The pre-questionnaire data will be collected, and responses will be evaluated to determine what policy revisions should be made to increase the coverage of DSME education using telehealth services in rural areas. After four weeks, the post-questionnaire will be collected to evaluate the effectiveness of telehealth service policy changes from diabetic experts in providing DSME services in rural areas. The information collected from diabetic experts will be used to develop a policy to improve how DSME is distributed to rural populations using telehealth services. Policymakers will receive information, provided from diabetic experts, who show how important DSME is to the quality of life of diabetic patients especially in rural areas.

Data Management and Storage

The project will adhere to protecting the anonymity of the participants and maintaining privacy and confidentiality. Data privacy will be maintained by using de-identifiable information and restricted access to the data. Additionally, only the project manager will access the data. The outcome of the data will provide information to policymakers to make evidence-based decisions from diabetic experts on how to improve the disseminate of DSME to rural diabetic patients.

Mission Statement, Goals, and Objectives

Mission Statement

The mission statement for this DNP project is "Partner with health care organizations to bring providers and patients together in rural populations using telehealth technologies to make policy changes to improve the dissemination of DSME." Telehealth services can assist health care organizations and providers by expanding access to improve the quality of the rural population's health care. The advantages of telehealth services include timeliness, frequent

monitoring, and improved communication with the patient's health care system and providers, particularly in areas with poor transportation.

Project Goals

According to Bjerke et al. (2017), to achieve set goals to improve public health successfully, solid and relevant objectives are required to monitor and evaluate the progress. Health goals guide the policies and plans formulated to enhance health care among diverse rural populations (CDC, 2014). Health-based goals aim at improving and promoting health and disease prevention. Setting SMART objectives will help evaluate the progress toward achieving health goals (Bjerke et al., 2017).

Goal 1

Develop an evidence-based protocol for a policy to support Diabetic Self-Management Education using telehealth services in adult patient between 18 to 70 years of age with type 2 diabetes residing in rural areas by obtaining expert opinion.

Objectives

- By week one, evaluate current healthcare protocol policies based on delivering DSME through telehealth services to diabetic patients in rural areas.
- By week three, after pre-questionnaire evaluation from diabetic expert opinion, determine what policy changes policymakers should make to support DSME services to rural areas based on diabetic expert opinion.
- By week six, after post-questionnaire evaluation from diabetic expert opinion, determine the ideal evidence-based protocols for policy change.

Goal 2

Evaluate the Diabetic Self-Management Education telehealth policy and implement policy revisions based on expert opinion.

Objectives

- Research telehealth policy guidelines to produce a pre and post questionnaire for diabetic experts by week two.
- After receiving the post questionnaire data and any revisions in week five, evaluate what policy revisions should take place for policymakers to improve the dissemination of DSME using telehealth services in rural populations.

Outcome Measures

One outcome measure for this project is how to deliver a consistent evidence-based pathway to deliver DSME to diabetic patients in rural areas via telehealth services. Secondary outcomes of the policy changes include making infrastructure improvements to rural areas broadband services so patients can receive DSME services. A third outcome measure is evaluating the questionnaire responses from diabetic experts to improve telehealth policies for the dissemination of DSME in rural diabetic populations.

Health Program Timeline

The project timeline will start with obtaining five diabetic experts to review a pre-questionnaire policy form and evaluate their responses through week three. After reviewing the pre-questionnaire responses, more reviews may be required as each diabetic expert responds. After the post-questionnaire responses are returned, the project manager will evaluate the responses, at a minimum of three, to determine the best policy change to improve the dissemination of DSME using telehealth services.

Ethical and Policy Implications

The onset of the COVID-19 pandemic in the world led to a rapid increase in demand and use of telehealth and telemedicine services; thus, outpatient visits were conducted virtually through video or telephone means. Despite the increased demand for telehealth services, rural populations are disadvantaged due to a lack of internet connection and technology devices, hence adverse health outcomes, especially during the COVID-19 pandemic (Ortega et al., 2020). Health care policymakers should consider making telemedicine accessible to the rural population, upgrading the infrastructure and internet as a means to address the social determinants of health in rural America (Ortega et al., 2020).

The restrictions imposed to mitigate the spread of COVID-19 include social distance; thus, telemedicine will help patients receive treatment while practicing safe measures regarding the pandemic. Additionally, policies on reimbursement of telehealth services should be revised and amended. According to Medicaid (2020), the state should reimburse the health care provider for telehealth services depending on the quality, efficiency, and economic status. Also, the state should cover the cost of equipment used, transmission fees, and technical support in implementing telemedicine.

The project will maximize the benefits such as successfully managing their diabetes and disorders, increasing patient satisfaction with telehealth services, reducing barriers to connectivity in the rural areas, improving patient outcomes, and enhancing the quality of life with policy changes in the way telehealth services are disseminated. Many temporary telehealth service policies were introduced because of the pandemic and policymakers will have an ongoing debate on what policies should be made permanent. Examples of temporary changes to the regulations are as follows:

- Telehealth visits can be provided in their homes

- All out-of-pocket costs are waived
- Visits no longer limited to rural residents
- Opioid prescriptions can be issued based on the telehealth visit
- HIPAA requirements for software with not be enforced
- Expanded types of care
- The types of providers that can deliver telehealth services has been expanded

(CMS, n.d.).

Clinicians have recently started to explore adding telehealth options to their current clinical practice because it can open new opportunities. There are legal and ethical considerations that must be considered for implementing telehealth services as well as deciding which telehealth platform to use to be HIPAA compliant. Health care providers that transmit protected health information must be HIPAA compliant by having training in the use of the telehealth platform and be qualified as a "covered entity." One example of a covered entity is a healthcare provider who transmits any health-related information electronically (CMS, n.d.). Providers, such as physicians and nurse practitioners, must be HIPAA compliant and any associate in the clinic or hospital that is transmitting electronic information must have documented training on telehealth services (CMS, n.d.).

The ethical statement that will be followed for this project is based on the SACE board of ethical conduct, and taking the responsibility of being honest, ethical, and having integrity. I will take the following responsibilities:

- Respect the dignity of participants, including their beliefs and perceptions
- Inform participants of the nature and purpose of the project
- Seek voluntary informed consent from participants

- Respect the right of the participants that they may withdraw from the project at any time without explanation and without any negative consequences
- Protect any personal information that could be acquired
- Respect any agreement made about the participants anonymity
- Use the data only for the purpose for which the consent has been obtained
- Inform the participants of any risk
- Submit only genuine findings or any results of their participation

(*Ethical conduct of research policy and procedures.* SACE Board (2015)

Results from Data Collection

The pre-questionnaire results evaluated after three diabetic experts responded to each question. Pre-questionnaire results are as follows:

- Are the current telehealth policies impacting your organization?
    - One response was no.
    - If yes, how?
        - Diabetic patients are using telehealth services more because of convenience.
        - Clinic requiring more training, infrastructure such as computers and better software, and current reimbursement rates need to be at the current rate or higher to continue providing telehealth services.
- What obstacle(s) do you see as a barrier to the dissemination of DSME using telehealth services in rural diabetic populations?
    - Nothing currently, with technology, because most patients or family members have smart phones.

    - Current policy states that the originating site must be at the clinic for the provider. They are concerned that if after hours the providers may not be compensated for their time if they provide telehealth services.
    - Providers concerned about availability of and affordability of their patient's internet service.

- How would you ensure access to a diabetic educator during regular clinic hours, so they are available for questions or concerns?
    - One clinic was able to staff another diabetic educator.
    - The other two clinics decreased the patient load of the educator in the clinic so they could address the patients via telehealth.
        - The other providers at the clinic had to increase their patient load to accommodate the diabetic educator.
- How would you address broadband Internet infrastructure improvements to rural populations so telehealth services can provide DSME services?
    - Talk to policy makers.
    - Have CMS and private medical insurance carriers offer smart phones or tablets to rural diabetic patients.
    - Local municipalities should provide broadband services.
    - Most patients are older (>45 yo), less educated, and less wealthy which hinders their ability to pay for broadband.
- What additional policy improvements would you suggest so DSME can be disseminated using Telehealth services?
    - Provide interpreter services.

    - Offer policies that include multiple languages.
    - Offer policies that address older patients because of hearing loss and/or vision problems.
        - Comfort level with technology.
        - Cognitive impairments.
        - Communication issues because of low digital literacy.

- Identify at least three strategies that you recommend, assessing that the diabetic patients would read and comprehend DSME materials that have been provided to them in advance of their scheduled telehealth appointment?
    - Include interactive features with video clips.
    - Use “teach-back” methods.
    - Providers can go into the system to see if the patient has been using the system.
    - Test the patient.
    - Review their answers.
- Identify at least three strategies that would improve the dissemination of DSME in rural populations using telehealth services to the socioeconomically challenged diabetic patients?
    - Provider must assess the patient for comprehension.
    - Educators must be culturally competent.
    - Offer smart phones.
    - Assist them in getting broad band services.
    - Increase local government funding and/or write grants.

- How do you see this policy impacting health disparities and health inequities to help rural populations of color?
    - Not improving.
        - Most patients are low income.
        - Lower literacy level.
        - Most patients do not have health insurance.
- Is there anything you would like to add to the policy that is proposed?
        - Nothing currently, the current policy is adequate.

The post-questionnaire results evaluated after three diabetic experts responded to each question. Post-questionnaire results are as follows:

- Are more patients using telehealth for DSME because the current policy is providing for it?
    - There has been an increase in patients using telehealth services, but it must include audio and video for Medicare reimbursement.
    - It is scalable.
    - Has been an effective way to efficiently reach more underserved rural populations.
    - Has addressed transportation issues with patients not having their own transportation.
- How would you expand current policy to address the originating site to give providers more options to offer telehealth services?
    - Talk to policy makers to include more than just their rural health clinic.

    - Providers that are on-call after hours could provide telehealth services from their home.
    - Match technology with the individual patient.
- Have you seen increased broadband in your area to your patients?
    - No, because local municipalities do not have the resources to pay for the broadband infrastructure.
- Have you been able to develop technology applications that address language barriers, hearing loss, and vision problems?
    - The telehealth platforms are improving but it must be cost effective for the clinic.
    - If the patients have a disability, they must have the appropriate equipment and technology to receive the telehealth services.
    - The clinics require additional training if the patient has a disability.
- How would you improve policy to address health disparities and inequities in rural diabetic populations?
    - Talk to federal policy makers and local policy makers.
    - Provide policy changes that make insulin and other supplies affordable.
    - Continue the current policy past the COVID pandemic.

Discussion of Data/Outcomes Interpretation

The current telehealth policies, according to the diabetic experts' responses, are adequate currently but the overwhelming concern is that they will be discontinued after the COVID-19 pandemic. Rural populations are disproportionately discriminated against because of a smaller population density over a larger surface area. This adds to the telehealth policy debate because policymakers do not want to make large expenditures in smaller rural populations.

The diabetic experts' responses also included that they want to assist their diabetic patients to the extent that they are able, but they also are aware that the clinic must stay financially viable. Telehealth services require infrastructure resources within the clinic and any change in the policy could result in the clinic not being able to offer telehealth services.

None of the diabetic experts thought the telehealth policy that was proposed should be changed. However, that doesn't mean that no policy changes should be made. Policymakers should address how to assist the underserved, uninsured, patients with disabilities, and rural diabetic populations in general so they are able to receive DSME through telehealth services. All the diabetic experts would like to talk to policymakers about the importance of keeping the current telehealth policy past the COVID-19 pandemic.

Summary

Rural populations have higher rates of diabetes than non-rural areas (Klee, 2020). Rural populations face barriers in accessing healthcare due to fewer transportation options and higher rates of underinsured and uninsured (Klee, 2020). Telehealth services can bridge the gap between providers and patients giving patients the ability to receive health-related education. DSME is a vital tool for patients to learn how to self-manage their diabetes and learn how to manage their blood sugar levels during hypoglycemic and hyperglycemic episodes.

According to the CDC (2020), 34.2 million U.S. residents were diagnosed with diabetes in 2020 and need diabetic education. Rural areas have a lower rate of DSME services compared to urban populations according to ADCES (2021). DSME participation improves self-management behaviors leading to improved glycemic control and decreased rates of diabetic complications (Hunt et al., 2018). The problem with the current dissemination of DSME in rural areas is how to effectively get this education to diabetic patients in rural areas. Patients living in

rural areas may have limited access to broadband internet services (Gal et al., 2018). According to the CDC (2020), approximately 60% of residents living in rural areas have access to telehealth services compared to 95% of urban populations. Also, the CDC (2020) reports that 62% of rural populations do not have DSME services.

The use of telehealth services such as mobile phones and video conferencing can aid in managing diabetes by monitoring and maintaining optimal glycemic control. Barriers such as poor infrastructure, lack of internet, limited hospitals and clinical facilities, few health care practitioners, and a high number of uninsured people hinder access to quality care in rural areas. The implementation of telehealth services will help in overcoming many of these barriers and support patient care processes. The aim of the healthy people 2030 initiative is to increase the number of diabetes patients who receive formal education from 51.7% to 55.2%. DSME education helps the patients to gain knowledge and engage in healthy behaviors and practices that help manage diabetes and improve patient outcomes. Additionally, the healthy people 2030 initiative aims to increase telehealth services and telemedicine to manage diabetes among patients. Complications related to diabetes if not managed include cardiovascular illnesses, blindness, Alzheimer's disease, hospitalization, poor quality of life, and death.

Telehealth services providing DSME can be accessed from anywhere, at the convenience of the patient rather than having to travel each time to the providers office. Barriers to telehealth services apply to providers and patients. Patients may have limited access to smartphones and high-speed broadband services in rural areas. Providers have expenses such as insurance, HIPAA compliance, low reimbursement rates that vary from state to state, IT infrastructure, and education and training for office staff and medical professionals which can be expensive to a rural clinic to start and maintain.

According to North (2021), regulatory telehealth policy changes should be reviewed so they focus on health equity, supporting primary care providers, improve health outcomes, coordinate care, and protect patient privacy because this will improve the patient's quality of life. This project focuses on the dissemination of DSME using telehealth services as the vehicle to deliver this education to rural diabetic populations. CMS reimbursement to providers of DSME telehealth delivery can be provided if the facility has DSMT educated providers, but policy legislation may not continue once the pandemic is completed. Private insurance carriers are providing reimbursements at the in-person clinic rate for telehealth services but that could also change once the pandemic is completed.

The data collection procedure will commence after receiving institutional review board (IRB) approval. The project is associated with minimum risk. Data collected will include the diabetic experts' answers to pre and post questionnaires. Data will be collected in two stages, pre-and post-questionnaires. The pre-questionnaire data will be collected, and responses will be evaluated to determine what policy changes should be made to increase the coverage of DSME education using telehealth services in rural areas. After four weeks, the post-questionnaire will be collected to evaluate the effectiveness of telehealth service policy changes from diabetic experts in providing DSME services in rural areas. The information collected from diabetic experts will be used to develop a policy to improve how DSME is distributed to rural populations using telehealth services. Policymakers will receive information, provided from diabetic experts, who show how important DSME is to the quality of life of diabetic patients especially in rural areas.

References

Association of diabetes care & education specialists (ADCES). Product Detail. (n.d.). https://nf01.diabeteseducator.org/eweb/DynamicPage.aspx?Action=Add&ObjectKeyFrom=1A83491A-9853-4C87-86A4-F7D95601C2E2&WebCode=ProdDetailAdd&DoNotSave=yes&ParentObject=CentralizedOrderEntry&ParentDataObject=Invoice%2BDetail&iv

American Diabetes Association | Research, Education, Advocacy. (n.d.). https://www.diabetes.org/

Bjerke, M. B., & Renger, R. (2017). Being smart about writing SMART objectives. *Evaluation and Program Planning*, *61*, 125–127. https://doi.org/10.1016/j.evalprogplan.2016.12.009

Bowen, R., & Warner, D. (2021). Building New Policies and Procedures to Incorporate Telehealth. *Journal of AHIMA*, 1.

Center for disease control and prevention. (2014). *Healthy people 2020*. https://www.cdc.gov/dhdsp/hp2020.htm

Center for disease control and prevention. (2018). The *health insurance portability and accountability act of 1996* (*HIPAA*). https://www.cdc.gov/phlp/publications/topic/hipaa.html

CDC. (2020, August 18). *Telehealth in rural areas*. https://www.cdc.gov/chronicdisease/resources/publications/factsheets/telehealth-in-rural-communities.htm

Center for disease control and prevention. (2021). *Diabetes self-management education and support (DSMEs) toolkit*.

https://www.cdc.gov/diabetes/programs/stateandlocal/resources/self-management-education-support.html

Center for disease control and prevention. (2021). *Diabetes test*. https://www.cdc.gov/diabetes/basics/getting-tested.html

Centers for Disease Control and Prevention. (2021, December 29). *Prevalence of diagnosed diabetes*. Centers for Disease Control and Prevention. Retrieved March 19, 2022, from https://www.cdc.gov/diabetes/data/statistics-report/diagnosed-diabetes.html

Are you a covered entity? CMS. (n.d.). https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/HIPAA-ACA/AreYouaCoveredEntity

Davis, J., Fischl, A. H., Beck, J., Browning, L., Carter, A., Condon, J. E., Dennison, M., Francis, T., Hughes, P. J., Jaime, S., Ka Hei Karen Lau, McArthur, T., McAvoy, K., Magee, M., Newby, O., Ponder, S. W., Quraishi, U., Rawlings, K., Socke, J., & Stancil, M. (2022). 2022 National Standards for diabetes self-management education and support. *Diabetes Care*, *45*(2), 484–494.

Fanburg, J. D., & Wafzman, J. J. (2018). Telehealth law: How policy shapes the marketplace. *Dermatology Times*, *39*(10), 76.

Fitzner, K. K., Heckinger, E., Tulas, K. M., Specker, J., & McKoy, J. (2014). Telehealth technologies: Changing the way we deliver efficacious and cost-effective diabetes self-management education. *Journal of Health Care for the Poor & Underserved*, *25*(4), 1853–1897. https://doi-org.akin.css.edu/10.1353/hpu.2014.0157

Food and drug association. (2018). *Health information on the web*. https://www.fda.gov/drugs/quick-tips-buying-medicines-over-internet/health-information-web

Gajarawala, S. N. & Pelkowski, J. N. (2020). Telehealth benefits and barriers. *The Journal for the Nurse Practitioners*, *17*(2), 218-221. https://doi.org/10.1016/j.nurpra.2020.09.013

Gal, R. L., Cohen, N. J., Kruger, D., Beck, R. W., Bergenstal, R. M., Calhoun, P., Cushman, T., Haban, A., Hood, K., Johnson, M. L., McArthur, T., Olson, B. A., Weinstock, R. S., Oser, S. M., Oser, T. K., Bugielski, B., Strayer, H., & Aleppo, G. (2020). Diabetes telehealth solutions: Improving self-management through remote initiation of continuous glucose monitoring. *Journal of the Endocrine Society*, *4*(9), 1–11. https://doi.org/10.1089/dia/2021.2510

Gonder-Frederick, L. A., Shepard, J. A., Grabman, J. H., & Ritterband, L. M. (2016). Psychology, technology, and diabetes management. *American Psychologist*, *71*(7), 577–589. https://doi-org.akin.css.edu/10.1037/a0040383

Haas, L., Maryniuk, M., Beck, J., Cox, C. E., Duker, P., Edwards, L., Fisher, E. B., Hanson, L., Kent, D., Kolb, L., McLaughlin, S., Orzeck, E., Piette, J. D., Rhinehart, A. S., Rothman, R., Sklaroff, S., Tomky, D., & Youssef, G. (2014). National standards for diabetes self-management education and support. *Diabetes Care*, *37*(S1), S144–S153.

Hunt, C. W., Henderson, K., & Chapman, R. (2018). Using technology to provide diabetes education for rural communities. *The Online Journal of Rural Nursing and the Health Care*, *18*(2), 134–151. https://doi-org.akin.css.edu/10.14574/ojrnhc.v18i2.525

Jiang, Y., Ramachandran, H. J., Teo, J. Y. C., Leong, F. L., Lim, S. T., Nguyen, H. D., & Wang, W. (2022). Effectiveness of a nurse-led smartphone-based self-management programme for people with poorly controlled type 2 diabetes: A randomized controlled trial. *Journal of Advanced Nursing*, *78*(4), 1154–1165. https://doi-org.akin.css.edu/10.1111/jan.15178

Jilla, A. M. (2021). Telehealth policy basics. *Audiology Today*, *33*(5), 59–63.

Ju, H. H. (2020). Using telehealth for diabetes self-management in underserved populations. *The Nurse Practitioner*, *45*(11), 26–33. https://doi-org.akin.css.edu/10.1097/01.NPR.0000718492.44183.87

Jun Yang Lee, Carina Ka Yee Chan, Siew Siang Chua, Chirk Jenn Ng, Paraidathathu, T., Kwing-Chin Lee, K., & Wen Huey Lee, S. (2016). Intervention for diabetes with education, advancement, and support (IDEAS) study: Protocol for a cluster randomized controlled trial. *BioMed Central Health Services Research*, *16*, 1–9. https://doi-org.akin.css.edu/10.1186/s12913-016-1782-y

Keegan, C. N., Johnston, C. A., Cardenas, V. J., Jr., & Vaughan, E. M. (2020). Evaluating the impact of telehealth-based diabetes medication training for community health workers on glycemic control. *Journal of Personalized Medicine*, *10*(3), 1-16. https://doi.org/10.3390/jpm10030121

Kelley, A. T., Nocon, R. S., & O'Brien, M. J. (2020). Diabetes management in community health centers: a review of policies and programs. *Current Diabetes Reports*, *20*(2), 8. https://doi-org.akin.css.edu/10.1007/s11892-020-1289-0

Kikukawa, L. (2017). The important factors to consider when developing rural health care systems: Suggestions from a Moloka'i Native. *Hawai'i Journal of Medicine and Public Health*: *A Journal of Asia Pacific Medicine and Public Health*, *76*(3 Suppl 1), 47–48. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5375015/

Klee. D. (2020). American Hospital Association. *Rural health care: Big challenges require big solutions*. https://www.aha.org/news/insights-and-analysis/2020-01-28-rural-health-care-big-challenges-require-big-solutions

Langarizadeh, M., Moghbeli, F., & Aliabadi, A. (2017). Application of ethics for providing telemedicine services and information technology. *The Journal of Academy of Medical Sciences in Bosnia and Herzegovina*, *71*(5), 351-355. https://doi.org/10.5455/medarh.2017.71.351-355

Lepard, M., Joseph, A., Agne, A., & Cherrington, A. (2015). Diabetes self-management interventions for adults with type 2 diabetes living in rural areas: A systematic literature review. *Current Diabetes Reports*, *15*(6), 1–12.

Luo, H., Basu, R., Bell, R. A., Rafferty, A. P., Zeng, X., Qu, H., & Dove, C. (2021). Rural-urban differences in uptake of diabetes self-management education among Medicare beneficiaries: Results from the 2016 to 2018 Medicare Current Beneficiary Survey. *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association*. https://doi-org.akin.css.edu/10.1111/jrh.12588

Mayo Clinic. (2021). *Type 2 diabetes*. https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/diagnosis-treatment/drc-20351199

McLendon, S. F. (2017). An interactive video telehealth models to improve access to diabetes specialty care and education in the rural setting: A systematic review. *Diabetes Spectrum*, *30*(2), 124-136. https://doi.org/10.2337/ds16-004

McLendon, S. F., Wood, F. G., & Stanley, N. (2019). Enhancing diabetes care through care coordination, telemedicine, and education: Evaluation of a rural pilot program. *Public Health Nursing*, *36*(3), 310–320. https://doi.og/10.1111/phn.12601

Medicaid. (2020). *Telemedicine*. https://www.medicaid.gov/medicaid/benefits/telemedicine/index.html

National institute of diabetes, digestive, and kidney diseases. (2016). *Managing diabetes*. https://www.niddk.nih.gov/health-information/diabetes/overview/managing-diabetes

National institute of diabetes, digestive, and kidney diseases. (2017). *Enhancing the opportunities in addressing obesity and type 2 diabetes disparities*. https://www.niddk.nih.gov/news/meetings-workshops/2017/enhancing-opportunities-addressing-obesity-type-2-diabetes-disparities

North, S. (2021). *These four telehealth changes should stay, even after the pandemic*. Family Practice Management. https://www.aafp.org/fpm/2021/0500/p9.html

Office of Disease Prevention and Health Promotion. (2021). *The health care access and quality*. https://health.gov/healthypeople/objectives-and-data/browse-objectives/health-care-access-and-quality

Office of Disease Prevention and Health Promotion. (2021). *Increase the proportion of adults with diabetes using insulin who monitor their blood sugar daily — D-*07. https://health.gov/healthypeople/objectives-and-data/browse-objectives/diabetes/increase-proportion-adults-diabetes-using-insulin-who-monitor-their-blood-sugar-daily-d-07/healthy-people-in-action

Office of Disease Prevention and Health Promotion. (2021). *Increase the proportion of people with diabetes who get formal diabetes education — D-06*. https://health.gov/healthypeople/objectives-and-data/browse-objectives/diabetes/increase-proportion-people-diabetes-who-get-formal-diabetes-education-d-06

Ortega, G., Rodriguez, J. A., Maurer, L. R., Witt, E. E., Perez, N., Reich, A., & Bates, D. W. (2020). Telemedicine, COVID-19, and disparities: Policy implications. *Health Policy and Technology*, *9*(3), 368–371. https://doi-org.akin.css.edu/10.1016/j.hlpt.2020.08.001

Park, J., Erikson, C., Han, X., & Iyer, P. (2018). Are state telehealth policies associated with the use of telehealth services among underserved populations? *Health Affairs*, *37*(12), 2060–2068. https://doi.org/10.1377/hlthaff.2018.05101

Patient experience BS4 // qualtrics. *Qualtrics*. (2021). https://www.qualtrics.com/lp/patient-experience/?utm_source=google&utm_medium=ppc&utm_campaign=US-CX-Customer-Satisfaction&utm_keyword=patient+satisfaction+survey&MatchType=e&adid=351572599672&utm_content=351572599672&adgroupid=42316547712&campaignid=755083357&Target=&targetid=kwd-317826563495&Device=c&devicemodel=&loc_phsyical_ms=9019692&network=g&adposition=&gclid=Cj0KCQjw3f6HBhDHARIsAD_i3D-OV1QpGA4H0Jg-f4Kl8Lc-av4CDZ7R__jMoe3bmxUF1kOOWTqHWucaAjXCEALw_wcB.

Pekmezaris, R., Williams, M. S., Pascarelli, B., Finuf, K. D., Harris, Y. T., Myers, A. K., Taylor, T., Kline, M., Patel, V. H., Murray, L. M., McFarlane, S. I., Pappas, K., Lesser, M. L., Makaryus, A. N., Martinez, S., Kozikowski, A., Polo, J., Guzman, J., Zeltser, R., & Marino, J. (2020). Adapting a home telemonitoring intervention for underserved Hispanic/Latino patients with type 2 diabetes: Acceptability and feasibility study. *BioMed Central Medical Informatics and Decision Making*, *20*(1), 1–14. https://doi-org.akin.css.edu/10.1186/s12911-020-01346-0

Powers, M. A., Bardsley, J. K., Cypress, M., Funnell, M. M., Harms, D., Hess-Fischl, A., Hooks, B., Isaacs, D., Mandel, E. D., Maryniuk, M. D., Norton, A., Rinker, J., Siminerio, L. M., & Uelmen, S. (2020). Diabetes Self-management Education and Support in Adults With Type 2 Diabetes: A Consensus Report of the American Diabetes Association, the Association of Diabetes Care & Education Specialists, the Academy of Nutrition and

Dietetics, the American Academy of Family Physicians, the American Academy of PAs, the American Association of Nurse Practitioners, and the American Pharmacists Association. *Diabetes Care*, *43*(7), 1636–1649.

Raths, D. (2015). Telehealth policy picture improving -- but slowly. *Healthcare Informatics*, *32*(5), 18–21.

Snyder, E. F., & Kerns, L. (2021). Telehealth billing for nurse practitioners during COVID-19: policy updates. *Journal for Nurse Practitioners*, *17*(3), 258–263. https://doi-org.akin.css.edu/10.1016/j.nurpra.2020.11.015

The college of Saint Scholastica entering class stats. College Factual. (2021, July 28). Retrieved March 21, 2022, from https://www.collegefactual.com/colleges/the-college-of-saint-scholastica/applying/entering-class-stats/

Theodos, K., & Sittig, S. (2020). The health information privacy laws in the digital age: HIPAA does not apply. *Perspectives in Health Information Management*, *18*(Winter), 1l. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7883355/

Warren, R., Carlisle, K., Mihala, G., & Scuffham, P. A. (2018). Effects of telemonitoring on glycemic control and health care costs in type 2 diabetes: A randomized controlled trial. *Journal of Telemedicine and Telecare*, *24*(9), 586–595. https://doi.org/10.1177/1357633X17723943

Whitehouse, C. R., Long, J. A., Maloney, L. M., Daniels, K., Horowitz, D. A., & Bowles, K. H. (2020). Feasibility of diabetes self-management telehealth education for older adults during transitions in care. *Research in gerontological nursing*, *13*(3), 138–145. https://doi.org/10.3928/19404921-20191210-03

Wu, C., Yang, L., Zhu, Wu, Z. W., Zhang, M, Zhu, Q, Chen, X, & Pan, Y. (2018). Evaluation of clinical outcomes of telehealth for managing diabetes. A PRISMA- compliant meta-analysis. *Medicine, 97*(43), Article e12962. https://doi.org/10.1097/MD.0000000000012962

Yoshida, Y., Patil, S. J., Brownson, R. C., Boren, S. A., Kim, M., Dobson, R., Waki, K., Greenwood, D. A., Torbjørnsen, A., Ramachandran, A., Masi, C., Fonseca, V. A., & Simoes, E. J. (2020). Using the RE-AIM framework to evaluate internal and external validity of mobile phone-based interventions in diabetes self-management education and support. *Journal of the American Medical Informatics Association: JAMIA*, *27*(6), 946–956. https://doi-org.akin.css.edu/10.1093/jamia/ocaa041

Appendix A

Table 1

Weekly Timeline

Objectives	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**
Obtain five diabetic experts						
Send pre-questionnaire policy form to experts						
Evaluate pre-questionnaire responses						
Send post-questionnaire to diabetic experts						
Evaluate post-questionnaire responses						

Appendix B

SWOT Analysis

Strengths • Practical • Innovative • Supplements the healthcare needs of rural populations	*Weaknesses* • Grants/Financial • Current policies for telehealth delivery • Community awareness and utilization
Opportunities • Expand the use of telehealth DSME services • Collaboration	*Threats* • Regulations/Policymakers • Reimbursement • Provider participation

Appendix C

Literature Matrix Table

Reference	Purpose/Question	Design	Sample	Intervention	Results	Notes
Gajarawala, S. N. & Pelkowski, J. N. (2020). Telehealth benefits and barriers. *The Journal for Nurse Practitioners*, https://doi.org/10.1016/j.nurpra.2020.09.013 Qualitative review of articles	To determine the benefits and barriers to telehealth. Will telehealth services improve access to care?	Qualitative review of articles	Patients in rural underserved areas.	N/A	Telehealth services can increase patient satisfaction, provide efficient quality care, and minimize costs.	
Gal, R. L., Cohen, N. J., Kruger, D., Beck, R. W., Bergenstal, R. M., Calhoun, P., Cushman, T., Haban, A., Hood, K., Johnson, M. L., McArthur, T., Olson, B. A., Weinstock, R. S., Oser, S. M., Oser, T. K., Bugielski, B., Strayer, H., & Aleppo, G. (2020). Diabetes telehealth solutions: Improving self-management through remote initiation of continuous glucose monitoring. *Journal of the Endocrine Society*, *4*(9), 1–11. https://doi-org.akin.css.edu/10.1210/jendso/bvaa076	To evaluate the feasibility of initiating continuous glucose monitoring (CGM) using telehealth as a means of expanding access.	Pilot study. Adults with type 1 diabetes or type 2 diabetes using insulin and interested in starting a CGM system.	participants were US residents age 18 years or older with type 1 or type 2 diabetes using either an insulin pump or basal-bolus insulin injection therapy, and not used CGM in real-time during the past 2 years prior to enrollment n=34	N/A	Participants showed a high degree of satisfaction with the use of telehealth services. The outcome questionnaire was completed at baseline and 12 weeks which a significant positive change.	
Hunt, C. W., Henderson, K., & Chapman, R. (2018). Using technology to provide diabetes education for rural communities. *Online Journal of Rural Nursing & Health Care*, *18*(2), 134–151. https://doi-org.akin.css.edu/10.14574/ojrnhc.v18i2.525	To determine if diabetes self-management education (DSME) of type 2 diabetes management could prevent complications delivered via iPad devices.	Pilot study	Study participants included 30 adults living with type 2 diabetes visiting health clinics in rural communities.	N/A	After using iPad devices, patients living with type 2 diabetes, were found to have increased knowledge of DSME	

Ju, H. H. (2020). Using telehealth for diabetes self-management in underserved populations. *The Nurse Practitioner*. doi: 10.1097/01.NPR.0000718492.44183.87	To examine literature assessing the feasibility of using telehealth services for DSME.	Qualitative and quantitative review of articles.	Identify articles that discuss DSME and the use of telehealth in low-socioeconomic status (LSES) populations	N/A	Eleven studies met the inclusion criteria. Studies were implemented in primary care clinics, university-affiliated health clinics, hospitals in both rural and urban areas.	DSME is a complex process
Keegan, C. N., Johnston, C. A., Cardenas, V. J., Jr., & Vaughan, E. M. (2020). Evaluating the impact of telehealth-based diabetes medication training for community health workers on glycemic control. *Journal of Personalized Medicine*, *10*(3), 1-16. https://doi.org/10.3390/jpm10030121	To evaluate the impact of telehealth-based diabetes medication training for CHWs on participant HbA1c levels at an urban community in Houston, Texas.	Qualitative study	Participants (n=55) and CHW (n=6) with slightly more females, middle age, employment type, and religious affiliation.	N/A	Intervention of telehealth-based diabetes medication training for CHWs allowed for a personal approach to identify barriers to care.	Strategy to improve diabetes care.
Lepard, M., Joseph, A., Agne, A., & Cherrington, A. (2015). Diabetes Self-Management Interventions for Adults with Type 2 Diabetes Living in Rural Areas: A Systematic Literature Review. *Current Diabetes Reports*, *15*(6), 1–12.	To evaluate the high rates of diabetes and its complications in rural communities.	Qualitative review of articles	Rigorously designed studies that described interventions with measured outcomes, a control or comparison group with a sample size > 50 (N>50).	N/A	Both in-person DSME and telehealth interventions have the potential to be effective for patients with T2DM living in rural areas.	
McLendon, S. F. (2017). An interactive video telehealth models to improve access to diabetes specialty care and education in the rural setting: A systematic review. *Diabetes Spectrum*, *30*(2), 124-136. https://doi.org/10.2337/ds16-004	To determine the effectiveness and cost-benefit considerations of interactive video telehealth models	Qualitative review of articles	14 research articles were selected, analyzing outcomes related to telehealth for endocrinology consultations, clinical care, and/or DSME.	N/A	Interactive video telehealth technology may improve glycemic control and DSME.	

Nerpin, E., Toft, E., Fischier, J., Lindholm-Olinder, A., & Leksell, J. (2020). A virtual clinic for the management of diabetes-type 1: study protocol for a randomised wait-list controlled clinical trial. *BMC Endocrine Disorders, 20*(1), NA. https://link.gale.com/apps/doc/A635066826/HRCA?u=mnacstsch&sid=HRCA&xid=5786326c	To determine if virtual clinics can improve DSME. Self-management is a large part of diabetes management and young adults with type 1 diabetes often miss traditional diabetes care office visits.	Randomized control trial with a control group according to a wait list design.	People with type 1 diabetes, aged 18-25 years. n=100	Baseline data will be collected from an interventi on group or a wait-list control group using closed randomiza tion envelopes containing randomiza tion cards.	The study will build upon how healthcare providers can improve DSME using virtual care. Data shows that 70% of young patients with type 1 diabetes have a HbA1C level above the target level of 52 mmol/mol in Sweden.	
Warren, R., Carlisle, K., Mihala, G., & Scuffham, P. A. (2018). Effects of telemonitoring on glycemic control and health care costs in type 2 diabetes: A randomized controlled trial. *Journal of Telemedicine and Telecare, 24*(9), 586–595. https://doi.org/10.1177/1357633X17723943	To examine the effect of a telehealth intervention on the control of T2DM	Randomized control trial	63 participants from each study arm.	The intervention (diabetes program) or control (usual care).	The intervention group decreased their HbA1c levels from 68 mmol/mol to 58 mmol/mol and remained unchanged in the control group.	Clinically meaningful and statistically significant benefit from telehealth intervention.

Whitehouse, C. R., Long, J. A., Maloney, L. M., Daniels, K., Horowitz, D. A., & Bowles, K. H. (2020). Feasibility of Diabetes Self-Management Telehealth Education for Older Adults During Transitions in Care. *Research in Gerontological Nursing, 13*(3), 138–145. https://doi-org.akin.css.edu/10.3928/19404921-20191210-03	To determine if DSMES delivered via telehealth is a feasible and acceptable method to provide diabetic education and support patients with type 2 diabetes.	Pilot study.	Hospitalized older adults age greater than and equal to 55. n=20.	Data feedback for improving the performance of telehealth services on type 2 diabetics.	Participants who completed the program their diabetes knowledge significantly improved from 63 (SD=20 to 78(SD=14) (p+0.02). No unplanned hospital readmissions.	

Appendix D

Pre-Questionnaire on Telehealth Policy

Telehealth policy proposal: All diabetic patients living in rural areas will receive telehealth services for their DSME.

1. Are the current telehealth policies impacting your organization?

   If yes, how?

2. What obstacle(s) do you see as a barrier to the dissemination of DSME using telehealth services in rural diabetic populations?
3. How would you ensure access to a diabetic educator during regular clinic hours, so they are available for questions or concerns?
4. How would you address broadband Internet infrastructure improvements to rural populations so telehealth services can provide DSME services?
5. What additional policy improvements would you suggest so DSME can be disseminated using Telehealth services?
6. Identify at least three strategies that you recommend, assessing that the diabetic patients would read and comprehend DSME materials that have been provided to them in advance of their scheduled telehealth appointment?
7. Identify at least three strategies that would improve the dissemination of DSME in rural populations using telehealth services to the socioeconomically challenged diabetic patients?
8. How do you see this policy impacting health disparities and health inequities to help rural populations of color?
9. Is there anything you would like to add to the policy that is proposed?

   Post-questionnaire questions will be based on the responses from the pre-questionnaire.

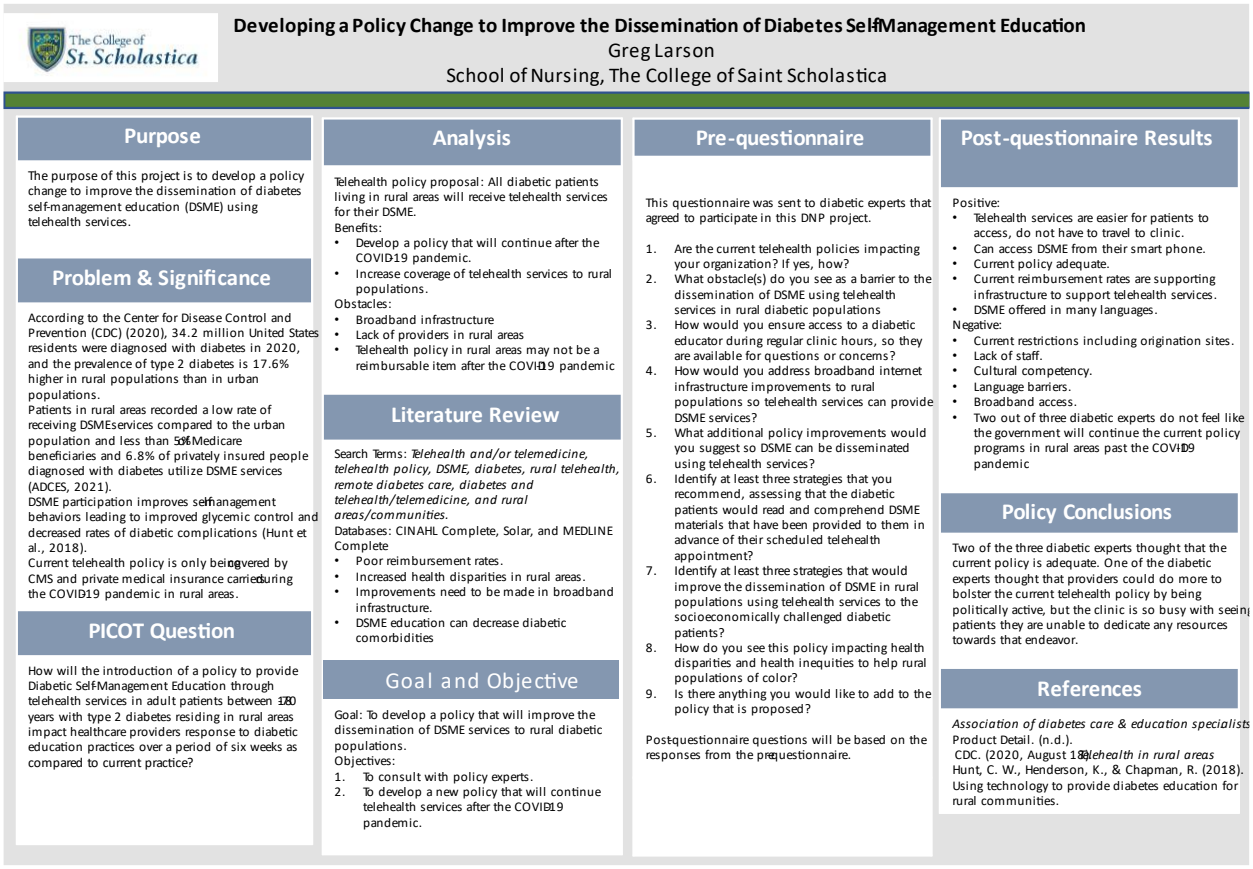
Appendix E

Post-Questionnaire on Telehealth Policy

1. Are more patients using telehealth for DSME because the current policy is providing for it?
2. How would you expand current policy to address the originating site to give providers more options to offer telehealth services?
3. Have you seen increased broadband in your area to your patients?
4. Have you been able to develop technology applications that address language barriers, hearing loss, and vision problems?
5. How would you improve policy to address health disparities and inequities in rural diabetic populations?

Appendix F

DNP Poster



Developing a Policy Change to Improve the Dissemination of Diabetes Self-Management Education

Greg Larson
School of Nursing, The College of Saint Scholastica

Purpose

The purpose of this project is to develop a policy change to improve the dissemination of diabetes self-management education (DSME) using telehealth services.

Problem & Significance

According to the Center for Disease Control and Prevention (CDC) (2020), 34.2 million United States residents were diagnosed with diabetes in 2020, and the prevalence of type 2 diabetes is 17.6% higher in rural populations than in urban populations.
Patients in rural areas recorded a low rate of receiving DSME services compared to the urban population and less than 5% Medicare beneficiaries and 6.8% of privately insured people diagnosed with diabetes utilize DSME services (ADCES, 2021).
DSME participation improves self-management behaviors leading to improved glycemic control and decreased rates of diabetic complications (Hunt et al., 2018).
Current telehealth policy is only being covered by CMS and private medical insurance carriers during the COVID-19 pandemic in rural areas.

PICOT Question

How will the introduction of a policy to provide Diabetic Self-Management Education through telehealth services in adult patients between 18-80 years with type 2 diabetes residing in rural areas impact healthcare providers response to diabetic education practices over a period of six weeks as compared to current practice?

Analysis

Telehealth policy proposal: All diabetic patients living in rural areas will receive telehealth services for their DSME.
Benefits:
- Develop a policy that will continue after the COVID-19 pandemic.
- Increase coverage of telehealth services to rural populations.

Obstacles:
- Broadband infrastructure
- Lack of providers in rural areas
- Telehealth policy in rural areas may not be a reimbursable item after the COVID-19 pandemic

Literature Review

Search Terms: *Telehealth and/or telemedicine, telehealth policy, DSME, diabetes, rural telehealth, remote diabetes care, diabetes and telehealth/telemedicine, and rural areas/communities.*
Databases: CINAHL Complete, Solar, and MEDLINE Complete
- Poor reimbursement rates.
- Increased health disparities in rural areas.
- Improvements need to be made in broadband infrastructure.
- DSME education can decrease diabetic comorbidities

Goal and Objective

Goal: To develop a policy that will improve the dissemination of DSME services to rural diabetic populations.
Objectives:
1. To consult with policy experts.
2. To develop a new policy that will continue telehealth services after the COVID-19 pandemic.

Pre-questionnaire

This questionnaire was sent to diabetic experts that agreed to participate in this DNP project.

1. Are the current telehealth policies impacting your organization? If yes, how?
2. What obstacle(s) do you see as a barrier to the dissemination of DSME using telehealth services in rural diabetic populations
3. How would you ensure access to a diabetic educator during regular clinic hours, so they are available for questions or concerns?
4. How would you address broadband internet infrastructure improvements to rural populations so telehealth services can provide DSME services?
5. What additional policy improvements would you suggest so DSME can be disseminated using telehealth services?
6. Identify at least three strategies that you recommend, assessing that the diabetic patients would read and comprehend DSME materials that have been provided to them in advance of their scheduled telehealth appointment?
7. Identify at least three strategies that would improve the dissemination of DSME in rural populations using telehealth services to the socioeconomically challenged diabetic patients?
8. How do you see this policy impacting health disparities and health inequities to help rural populations of color?
9. Is there anything you would like to add to the policy that is proposed?

Post-questionnaire questions will be based on the responses from the pre-questionnaire.

Post-questionnaire Results

Positive:
- Telehealth services are easier for patients to access, do not have to travel to clinic.
- Can access DSME from their smart phone.
- Current policy adequate.
- Current reimbursement rates are supporting infrastructure to support telehealth services.
- DSME offered in many languages.

Negative:
- Current restrictions including origination sites.
- Lack of staff.
- Cultural competency.
- Language barriers.
- Broadband access.
- Two out of three diabetic experts do not feel like the government will continue the current policy programs in rural areas past the COVID-19 pandemic

Policy Conclusions

Two of the three diabetic experts thought that the current policy is adequate. One of the diabetic experts thought that providers could do more to bolster the current telehealth policy by being politically active, but the clinic is so busy with seeing patients they are unable to dedicate any resources towards that endeavor.

References

Association of diabetes care & education specialists Product Detail. (n.d.).
CDC. (2020, August 18). *Telehealth in rural areas*
Hunt, C. W., Henderson, K., & Chapman, R. (2018). Using technology to provide diabetes education for rural communities.

Appendix G

Letters of Inquiry

The College of St. Scholastica School of Nursing

The Dissemination of DSME using Telehealth Services in Rural Areas

Consent Document

You are invited to participate in a quality improvement project focused on DSME dissemination using telehealth services in rural areas. The clinical project director is Gregory Larson, RN, BSN, a graduate nursing student at the College of St. Scholastica. You were selected as a possible participant because you are a diabetic educator, endocrinologist, or diabetic expert. I ask that you read this form and ask any questions you may have before agreeing to participate.

Project purpose

The purpose of this project is to propose a policy to disseminate DSME effectively using telehealth services to rural diabetic patients.

Project Procedure

You will be asked to participate in this project in the following ways:

1. A proposed policy will be submitted to you for evaluation.
2. You will be asked to answer questions in a pre-questionnaire, and possible revisions, and a post-questionnaire, and possible revisions, based on the pre-questionnaire responses. The estimated time required for each questionnaire response would be no more than 30 minutes.
3. You may be asked general, or revision questions based on responses from the questionnaires.
4. The project timeline is six weeks.

Project Benefits

The project may benefit healthcare organizations and patients by the development of a telehealth policy that would effectively disseminate DSME using telehealth services to rural diabetic patients.

Project Risks/Discomforts

There are no risks or discomforts for this project.

Confidentiality

Your information will only be used for the purposes of this project. In any publication or presentations, we will not include any information that will make it possible to identify you. Your record for the project may be reviewed by individuals at CSS with appropriate regulatory

oversight. To these extents, confidentiality is not absolute. Your consent form and data will be retained securely for three years after which time it will be destroyed. Your information will be stored on a password protected computer

Voluntary Nature of the Project

Participation in this project is voluntary. Your decision on whether or not to participate in this project will not affect your current or future relations with The College of St. Scholastica. If you decide to participate in this project, you are free to withdraw at any time without affecting those relationships.

Contact and Questions

The clinical project leader is Greg Larson, RN, BSN, a doctoral student at the College of St. Scholastica. You may ask any questions you have now, or if you have questions later, you are encouraged to contact Greg Larson, RN by phone, (612) 750-1519, or email glarson4@css.edu.

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher, you are encouraged to contact the following individuals:

- Project Advisor – Dr. Rhea Ferry, DNP, APRN, FNP-C, NE, rferry@css.edu
- Department Chair – Nicole Nowak, Ph.D. nnowaksaenz@css.edu
- School Dean – Megan Perry-Spears, Dean of Students, mperryspears@css.edu
- Nicole Nowak-Saenz, Ph.D., Chair of the Institutional Review Board at nnowaksaenz@css.edu

You may also contact any of the above-named individuals in writing or in person at The College of St. Scholastica, 1200 Kenwood Ave, Duluth, MN 55811.

Lynn Burmeister, MD

Printed Name of Participant

Lynn B Date 2/18/2022

Signature of Participant

You have the option to have your name and title be included or not included in the document (please circle one)

Date 2/18/2022

Signature of Project Leader

February 18, 2022

Hello Gregory,

Dr. Burmeister would be happy to participate in your DNP project. Please keep us updated on the next steps. If you have any questions, please feel free to contact me.

Sincerely,

Pam Wener

Pam Wener
Administrative Assistant
University of Minnesota Medical School

CC; Dr. Burmeister

Enclosure

The College of St. Scholastica School of Nursing

The Dissemination of DSME using Telehealth Services in Rural Areas

Consent Document

You are invited to participate in a quality improvement project focused on DSME dissemination using telehealth services in rural areas. The clinical project director is Gregory Larson, RN, BSN, a graduate nursing student at the College of St. Scholastica. You were selected as a possible participant because you are a diabetic educator, endocrinologist, or diabetic expert. I ask that you read this form and ask any questions you may have before agreeing to participate.

Project purpose

The purpose of this project is to propose a policy to disseminate DSME effectively using telehealth services to rural diabetic patients.

Project Procedure

You will be asked to participate in this project in the following ways:

1. A proposed policy will be submitted to you for evaluation.
2. You will be asked to answer questions in a pre-questionnaire, and possible revisions, and a post-questionnaire, and possible revisions, based on the pre-questionnaire responses. The estimated time required for each questionnaire response would be no more than 30 minutes.
3. You may be asked general, or revision questions based on responses from the questionnaires.
4. The project timeline is six weeks.

Project Benefits

The project may benefit healthcare organizations and patients by the development of a telehealth policy that would effectively disseminate DSME using telehealth services to rural diabetic patients.

Project Risks/Discomforts

There are no risks or discomforts for this project.

Confidentiality

Your information will only be used for the purposes of this project. In any publication or presentations, we will not include any information that will make it possible to identify you. Your record for the project may be reviewed by individuals at CSS with appropriate regulatory

oversight. To these extents, confidentiality is not absolute. Your consent form and data will be retained securely for three years after which time it will be destroyed. Your information will be stored on a password protected computer

Voluntary Nature of the Project

Participation in this project is voluntary. Your decision on whether or not to participate in this project will not affect your current or future relations with The College of St. Scholastica. If you decide to participate in this project, you are free to withdraw at any time without affecting those relationships.

Contact and Questions

The clinical project leader is Greg Larson, RN, BSN, a doctoral student at the College of St. Scholastica. You may ask any questions you have now, or if you have questions later, you are encouraged to contact Greg Larson, RN by phone, (612) 750-1519, or email glarson4@css.edu.

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher, you are encouraged to contact the following individuals:

- Project Advisor – Dr. Rhea Ferry, DNP, APRN, FNP-C, NE, rferry@css.edu
- Department Chair – Nicole Nowak, Ph.D. nnowaksaenz@css.edu
- School Dean – Megan Perry-Spears, Dean of Students, mperryspears@css.edu
- Nicole Nowak-Saenz, Ph.D., Chair of the Institutional Review Board at nnowaksaenz@css.edu

You may also contact any of the above-named individuals in writing or in person at The College of St. Scholastica, 1200 Kenwood Ave. Duluth, MN 55811.

Megan Meganan, PA-C
Printed Name of Participant

Date 1/26/2022
Signature of Participant

You have the option to have your name and title be included or not included in the document (please circle one)

Date 3/1/2022
Signature of Project Leader

The College of St. Scholastica School of Nursing

The Dissemination of DSME using Telehealth Services in Rural Areas

Consent Document

You are invited to participate in a quality improvement project focused on DSME dissemination using telehealth services in rural areas. The clinical project director is Gregory Larson, RN, BSN, a graduate nursing student at the College of St. Scholastica. You were selected as a possible participant because you are a diabetic educator, endocrinologist, or diabetic expert. I ask that you read this form and ask any questions you may have before agreeing to participate.

Project purpose

The purpose of this project is to propose a policy to disseminate DSME effectively using telehealth services to rural diabetic patients.

Project Procedure

You will be asked to participate in this project in the following ways:

1. A proposed policy will be submitted to you for evaluation.
2. You will be asked to answer questions in a pre-questionnaire, and possible revisions, and a post-questionnaire, and possible revisions, based on the pre-questionnaire responses. The estimated time required for each questionnaire response would be no more than 30 minutes.
3. You may be asked general, or revision questions based on responses from the questionnaires.
4. The project timeline is six weeks.

Project Benefits

The project may benefit healthcare organizations and patients by the development of a telehealth policy that would effectively disseminate DSME using telehealth services to rural diabetic patients.

Project Risks/Discomforts

There are no risks or discomforts for this project.

Confidentiality

Your information will only be used for the purposes of this project. In any publication or presentations, we will not include any information that will make it possible to identify you. Your record for the project may be reviewed by individuals at CSS with appropriate regulatory

oversight. To these extents, confidentiality is not absolute. Your consent form and data will be retained securely for three years after which time it will be destroyed. Your information will be stored on a password protected computer

Voluntary Nature of the Project

Participation in this project is voluntary. Your decision on whether or not to participate in this project will not affect your current or future relations with The College of St. Scholastica. If you decide to participate in this project, you are free to withdraw at any time without affecting those relationships.

Contact and Questions

The clinical project leader is Greg Larson, RN, BSN, a doctoral student at the College of St. Scholastica. You may ask any questions you have now, or if you have questions later, you are encouraged to contact Greg Larson, RN by phone, (612) 750-1519, or email glarson4@css.edu.

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher, you are encouraged to contact the following individuals:

- Project Advisor – Dr. Rhea Ferry, DNP, APRN, FNP-C, NE, rferry@css.edu
- Department Chair – Nicole Nowak, Ph.D. nnowaksaenz@css.edu
- School Dean – Megan Perry-Spears, Dean of Students, mperryspears@css.edu
- Nicole Nowak-Saenz, Ph.D., Chair of the Institutional Review Board at nnowaksaenz@css.edu

You may also contact any of the above-named individuals in writing or in person at The College of St. Scholastica, 1200 Kenwood Ave, Duluth, MN 55811.

Kathy O'Brien, APRN, CNP
Printed Name of Participant

Date 2-24-2022
Signature of Participant

You have the option to have your name and title be included or not included in the document (please circle one)

Date 2/24/2022
Signature of Project Leader