Prevalence Of Diabetes In The USA

Diabetes is a very serious disease that has been on the rise for the last few decades and continues to worsen. According to the CDC, “Diabetes is the 7th leading cause of death in theUnited States.” They also report that 34 million Americans in the United States have Diabetes with 20% of them not even knowing they have it (CDC 2020). Leaving many at risk for more serious medical complications in the future. According to the American Journal of Managed Care the cost of spending on Type I and Type II Diabetes is $237 billion. Leaving it hard for many to be able to afford proper care for Type I or Type II Diabetes. Early glycemic control is so extremely important to help prevent acute complications of Diabetes that can lead to even more chronic health issues (Kompala and Neinstein 2019). Utilizing the advancement of AI Apple Products has been able to develop a glucose monitoring system built into the Apple Watch. With the advancement of AI anyone in the world will have access to a glucose monitoring system making it cheaper and easier to diagnosis Type I and Type II Diabetes.

Continuous glucose monitoring has been in development for over 20 years now, but the main focus of the technology has been focused on Type I Diabetics. This proposal will serve to understand how this technology will be utilized for the Type II Diabetics, pre-diabetic, as well as the non-diagnosed diabetics. The main purpose of continuous glucose monitoring (CGM) is glycemic control, reducing HbA1c and hypoglycemic occurrences (Vettoretti et al 2018). With no other technology readily accessible Type II diabetics and Pre-Diabetics have used self-monitoring glucose system and AIC tests to monitor their sugar. Utilizing such methods comes with complications and added costs such as having to use multiple testing strips throughout the day, and constant physical pain in the finger. The first CGM systems that were available more than 20 years ago to patients provided them with inaccurate test results and large and bulky machines to test their blood. Type I Diabetics did not utilize this system largely due to the cost of these expensive devices (Kompala and Neinstein 2019).

According to a Journal article posted in SAGE, companies like Medtronic are focusing on making these CGMs for Type II Diabetics and pre-diabetics. The developers main focus is to provide patients with a CGM sensors that are more affordable, less visible and to be used as a single use so that users of the system do not have to constantly change them every day (Vettoretti et al 2018). The advancement of the new CGM systems are being designed for not only the diabetic population, but for the non-diagnosed population as well. Utilizing this system will provide diabetic testing technology to the general population. The new CGM sensors will let users know they are becoming hypoglycemic and will in turn initiate an alert to get carbohydrates to the users body system. A key feature of this product is that caregivers and health care providers can benefit from this technology by being able to track how their patient or loved one is doing. Users of the new CGM system will benefit from the system being able to identify an automatic pattern recognition to recognize if patients have poor glycemic control. The application on user’s watch or phone can alert them and even give specifics on what a patient should eat to help with low sugar. This technology can ultimately help with prevention of diabetes, healthier eating and an overall better lifestyle (Vettoretti et al 2018).

A concern with promoting these CGMs in the Type II Diabetic and pre-diabetic communities would be the cost for system and application? Research is lacking in this area and there has not

been many findings regarding exactly how cost-effective CGMs are for Type II diabetics. The more AI and technology is being developed the increasing need for more studies has led to new studies that are being tested currently. An article written by Fonda, Graham, Powers, Price, and Vigersky (2016) discusses the cost-effectiveness of CGMs on Type II diabetics and shows promising results in improvement in A1C. The results showed statistically major improvement in A1C in the first 3 months of the study and these improved results continued for the rest of the year. The outcome of this study showed an overall reduction in A1C level of 1.1 at the end of their trial. The interventions in this study were primarily pretty short however the greater outcome of cost-effectiveness and health benefits were noted (Fonda et al., 2016). With the interventions being short, cost-effective, and providing health benefits this technology could be beneficial for the general population as well as providers.

The proposal of utilizing this technology would be very beneficial in a perfect world, but unfortunately with new technology comes expensive cost. An article written by Diabetes specialist, Alisa Wharton, explains that in 2017 Medicare decided to cover CGMs for people that qualified under its conditions and most insurance companies vary all over. Allowing for more patients and providers being able to utilize and benefit from the new system. Currently the CGMs that are currently in use are more expensive than the usual finger-prick method. Wharton (2017) discussed how CGM can cost users $100 or more per month. With many people in the general population already having an Apple Watch or smart device the system becomes cost-effective and readily accessible due to not having to purchase a receiver to retrieve all their information. Insurance companies that cover CGMs cover roughly around 80% of all the equipment needed. Medicare Part B has broad requirements for their individuals with type 1 or type 2 diabetes allowing for more patients to utilize the system. Users will need to consult with their physician at least twice a year and having to check their blood sugar four or more times a day and finally if they require insulin on daily basis (UAB Medicine 2020).

In conclusion, this proposal believes that all Type II Diabetics and pre-diabetics should be on continuous glucose monitoring, but unfortunately due to the cost it is not easily accessible to many individuals. As technology and AI advances new science becomes more expensive and unaffordable to the general public that need it. The use of the CGM on the Type II and pre-diabetic population needs more clinical trials and data to help support this decision. If the technology and clinical trials are successful it will allow for the general populations health to improve greatly. In all practices with diabetic patients, providers should implement teaching about these resources to the patients and their families. Education and prevention is important in helping the public understand the cost and benefits of this system, which will ultimately lead to a lower amount of Diabetes related complications in medical field.