

Health Equity and Disability Issues in Diabetes Care

Trisha Menon, MD, and Alyson K. Myers, MD

INTRODUCTION

Almost 11% of the United States population, or around 37.3 million people, have diabetes, with higher rates among those with lower socioeconomic status or lower levels of education.¹ The financial burden of diabetes in 2017 was \$327 billion dollars, 72% of which was due to direct medical costs.² Approximately 1 in 4 health care dollars is spent on diabetes alone.³ Medications for comorbid conditions and inpatient admissions due to diabetes are the largest drivers of high direct medical costs.² Use of inpatient diabetes teams have been associated with a decreased rate of 30-day hospital readmission, decreased length of hospital stay, and lower hospital costs^{4,5} but are not readily available at all inpatient facilities. Access to such services is only one example of health inequity in diabetes care. There are also numerous other disparities in diabetes care including prescribing differences, access to care, health insurance variations (eg, Medicaid vs. commercial insurance), and a myriad of other social determinants of health (eg, low health literacy) that can impact diabetes care. The goals of this paper are to define health equity, describe examples of health inequity, and describe solutions that case managers can use when caring for people with diabetes.

HEALTH EQUITY

According to the Centers for Disease Control and Prevention (CDC), health equity is achieved when every person has the opportunity to “attain his or her full health potential” and no one is “disadvantaged from achieving this potential because of social position or other socially determined circumstances.” The [American Diabetes Association \(ADA\) Health Equity Now Bill](#) outlines certain rights shown in Table 1.

Equity for people with diabetes is created and maintained by providers, health systems, and community, and fractures in such systems lead to inequity.⁶ The root cause of this fractured system is the social determinants of health (SDOH) that disallow patients to be on the same playing field.⁷ In addition, providers need to be versed in how to address these SDOH as well as cultural competency⁷ because diabetes affects Blacks, Hispanics, and American Indians at higher rates than Whites.¹

HEALTH BARRIERS

SDOH have proven to be more important than medical treatment with regard to longer life expectancy.⁸ Some of the SDOH

TABLE 1 THE AMERICAN DIABETES ASSOCIATION HEALTH EQUITY BILL OF RIGHTS

- The right to access insulin and other drugs affordably.
- The right to healthy food.
- The right to health insurance that covers diabetes management and future cures.
- The right not to face stigma or discrimination.
- The right to avoid preventable amputations.
- The right to participate in clinical trials without fear.
- The right to stop prediabetes from becoming diabetes.
- The right to build an environment that does not put you at greater risk for getting diabetes.
- The right to the latest medical advances.
The right to have your voice heard.

that need to be assessed in diabetes management include but are not limited to health literacy, transportation, food and housing insecurity, lack of access to technology, culture, and medication costs. Additional disabilities such as language and visual/hearing barriers affect diabetes care, and provider/staff education is often a limitation as well.

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Health Literacy

Health literacy is often a major hindrance to achieving optimal health care, and there is a strong relationship between health literacy and health care outcomes.⁸ Health literacy lies on a spectrum. In some instances, people may have a good foundation of health literacy but experience challenges around people (ie, providers) or places they consider intimidating. Some of the fundamentals of health literacy involve reading and writing as well as numerical and comprehension skills needed to obtain and understand medical information to drive decision making. For people with diabetes, these skills are crucial because they have to regularly test their blood sugar and make both medication and dietary decisions based on the results.

Hearing/Visual Impairment

There are about 3.2 million people in the United States who live with visual impairment and diabetes, and visual impairment has been shown to decrease a patient's ability to self-manage his or her diabetes.⁹ The main issues that arise with visual impairment are lack of access to diabetes information and equipment in an accessible format and poor understanding by healthcare providers of the needs of this patient population.¹⁰ Hearing loss, a barrier that is more common in people with diabetes than in those without diabetes, has a significant negative impact on a patient's ability to manage their diabetes.¹¹ These limitations need to be recognized and addressed as discussed below.

Language

A major consequence of physician-provider language discordance is miscommunication, which leads to patients having less understanding of their diagnosis, prognosis, and treatment.¹² In addition, they have limited access to services, thereby leading to reduced quality of care and reduced satisfaction for both providers and patients.¹² For groups who have not assimilated as much into American culture, these language barriers may even be greater because there are limited resources in their language.¹² One study demonstrated that limited English proficiency was independently associated with feelings of receiving suboptimal care, and especially so when interacting with providers who did not speak their language.¹³ Correcting for this can improve diabetes control, as seen by another study that demonstrated that accommodating for language discrepancy among Latino populations with limited English proficiency improved glycemic control by 10% and decreased poor control by 4%.¹⁴

Cultural Competency

Bridging language barriers is important, as is recognizing cultural barriers. Some cultures, including Hispanic, Western Pacific, Chinese, South Asian, and Middle Eastern, emphasize the role of family in medical care and dietary habits. In many of these cultures, diabetic dietary limitations may lead to social and cultural isolation because meals are often prepared for the whole family or for celebrations.¹⁵ In some Chinese populations, emphasis has been placed on balanced food (eg, rice and vegetables or rice and protein), and these families may see dietary limitations as something that is impeding this balance. Rice is often seen as a vital food for sustaining health in Chinese cultures.¹⁵ In South Asian communities, there are beliefs that the family should be kept "well fed," and thus dietary limitations are difficult to follow. Moreover, traditional diets for people with diabetes are difficult to adhere to in many cultures because starches are staples and people may be unaware of alternative options.¹⁵ Additionally, some groups, such as migrant workers, see health care providers as sole decision makers for their health, and thus they may be intimidated to question the providers, who they feel are superior.¹⁶

Social Factors

Housing, transportation, and food insecurities are often overlooked causes of poor care for diabetes. Transportation access is an important barrier to care because it can impact a patient's ability to arrive at their appointments on time or at all. It has been shown that patients with no nonemergency transportation often miss appointments.¹⁷ In other instances, patients may not have access to healthy food options or a refrigerator, either because of limited finances or because they live in a food desert. Interestingly, a longitudinal study of people with diabetes found that food insecurity, as opposed to living in a food desert, was associated with poorer glycemic control.¹⁸ Unfortunately, homelessness or temporary housing (ie, shelters or motels) is another factor that must be considered when caring for people with diabetes. Patients may not prioritize their medications or be able to store them safely (eg, insulin requires refrigeration). Lack of access to care and health insurance are two important barriers for people with diabetes who are homeless.¹⁹

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Prescribing Practices: Medications and Diabetes Technology

Having health insurance allows patients to have access to more medication options, but all insurances are not created equal. Non-White patients are more likely to have insurance with higher deductibles or premiums, which leads to higher out-of-pocket costs.²⁰ In a study of Medicare Advantage and commercial insurance recipients, newer agents such as sodium-glucose cotransporter-2 (SGLT-2) inhibitors and glucagon-like peptide-1 (GLP-1) agonists were more likely to be prescribed to White individuals and those with commercial insurance and higher incomes.²⁰ Insulin prices vary depending on the type prescribed; premixed insulin and insulin in a vial/syringe tend to be less expensive.²¹ Pharmaceutical monopolies and long-lasting patents make analog insulin ten times more expensive in the United States than in any other developed country.^{22,23}

Insurance type also affects access to diabetes technology such as insulin pumps or continuous glucose monitors (CGMs), but insurance companies are not only to blame; provider communication and bias about who can manage a pump or a CGM have also been implicated.²⁴ There is a clear difference seen in the rates of diabetes technology use across racial and insurance types. In a study by Agarwal et al. of patients with type 1 diabetes, Whites were more likely to use both an insulin pump and/or a CGM compared with Hispanic or Black patients.²⁵ White participants also had a higher income, higher rates of health insurance, and more education. Improving access to technology, for example CGM data sharing, can further balance the discrepancies in healthcare, leading to better outcomes.²⁶

STEPS TO TAKE TO OVERCOME BARRIERS

All of these aforementioned barriers contribute to poor glycemic control and poor health outcomes in people with diabetes. Diabetes is one of the leading causes of end-stage kidney disease, blindness, and lower limb amputations in the United States.²⁷ As a result, it is important to work in multidisciplinary teams to mitigate some of the barriers to good diabetes care.

Diabetes Education

Patient education traditionally was done on an inpatient basis, but because of insurance reimbursement changes it has shifted to an outpatient basis. This does not preclude providers from ensuring

that patients with diabetes are educated in the hospital setting and upon discharge. This can be done by first understanding a patient's level of health literacy and learning style (ie, visual vs. auditory). Providers, nurses, and case managers can work together to ensure that a patient knows the purpose of their medications and how to take them. The teach-back method, in which a patient explains their medications to confirm understanding, has been beneficial.⁸ When there are language and literacy barriers or limitations because of hearing or visual impairment, it is important to provide information that patients will be able to understand. Language and sign language interpreters are extremely useful in relaying information, especially if they have an understanding of cultural nuances.¹⁶ It may also be appropriate to involve family members who may be caregivers or food preparers in these discussions.¹⁶ In other instances, digital translation tools such as Google Translate can further assist patients once they leave the hospital, and introducing them to these technologies while they are an inpatient can benefit them in their home.¹⁶ In the case of visual impairment, it is important to provide resources in audio form for future references (eg, recordings)⁹. Additionally, certain diabetes supplies are equipped to help visually impaired patients. There are blood glucose meters that read fingersticks out loud. If patients are unable to read or have poor health literacy, pictograms, illustrated text, or spoken animations can be beneficial.⁸

Teaching patients about insulin, which is crucial for patients leaving the hospital, is often overlooked. If case managers are also trained as nurses, they can be instrumental in teaching patients about the different types of insulin as well as how to inject and store it. Although some patients have previously received insulin, they may not be injecting it correctly or using the needle tip that is best for them.²⁸ In a study of 20 Black or Hispanic inpatients who had received insulin, most patients made errors in their insulin pen technique, most commonly not priming the pen or shortening the dwell time of the needle.²⁹ However, sometimes patients' fears and limitations can interfere with teaching and following through with therapy, also known as psychological insulin resistance. Common causes for psychological insulin resistance are fears of insulin permanence or restrictiveness, concerns about hypoglycemia, or feelings of failure.^{30,31} Addressing these issues may ameliorate the issue. Alternatively, case managers can work with the patient's caregivers as they

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may be able to give the patient insulin. For people with diabetes who have a needle phobia as a barrier there are pen needles where the pen needle cap prevents the patient from seeing the needle.

Insurance coverage

The cost of medications and affordability are two factors that need to be considered when devising a treatment plan for people with diabetes. An insurance company may not cover a medication, or they may cover a different medication within the same class. In situations where medications can be obtained via prior authorizations, case managers can work with pharmacists to help get approval.³⁵ In the hospital setting, the health care team can complete these prior authorizations before discharge, thereby streamlining the process and helping patients obtain medications they need.³² In certain outpatient settings, case managers are an integral part of the process of completing prior authorizations.³³

In a similar vein, case managers can work with insurance companies to determine if their patients qualify for a CGM or insulin pump. The Centers for Medicare & Medicaid Services (CMS) covers a CGM for people with diabetes who use three or more insulin injections a day and require medication adjustments based on blood sugar testing.³⁴ Although Medicare plans adhere to these guidelines, Medicaid plans in many cases are more stringent in their coverage criteria. Case managers may be able to identify appropriate patients and suggest CGM use to providers. A CGM can be obtained from select pharmacies or a durable medical equipment company, depending on the insurance coverage.³⁵

Similarly, case managers can suggest that patients discuss insulin pump technology further with their outpatient providers because patients are required to complete outpatient visits and diabetes education to qualify for an insulin pump. CMS requires that patients be taking at least 3 shots of insulin per day. In addition, the patient must have a diagnosis of type 1 diabetes or they must demonstrate that they no longer make insulin as noted by a C-peptide level of <0.5 ng/mL. Alternatively, if the patient has type 2 diabetes or still makes insulin, they must have the following: “Glycosylated hemoglobin level >7%, history of recurrent hypoglycemia, wide fluctuations in blood glucose before mealtime, dawn phenomenon with fasting blood sugars frequently exceeding 200 mg/dL, or a history of severe glycemic excursions.”³⁶

Discharge Appointment

Finally, one of the key steps that case managers can help with is ensuring that a patient with diabetes has a follow-up outpatient

appointment upon discharge. If this appointment has already been made and the patient has been reminded about it, the patient will be more likely to follow up. In addition, barriers to making the appointment, such as transportation issues, should be discussed. Discharge appointments with a diabetes provider (primary care, endocrinologist, or a diabetes educator) within 30 days are required for patients with uncontrolled diabetes or medication changes at hospitals with the Joint Commission’s Advanced Certification in Inpatient Diabetes Care.³⁷

CONCLUSION

Understanding the importance of health care barriers and their overall impact on diabetes care is crucial.

Different facets of SDOH (ie, low health literacy, language, or low income) have been implicated in the inequities of diabetes care. These barriers can be reduced by using the teach-back method, language interpreters, and illustrations; by involving family members as appropriate; by evaluating medication costs; by obtaining prior authorizations; and by confirming outpatient follow-up. Addressing these issues while people with diabetes are hospitalized can hopefully prevent further hospitalizations and patient and societal burdens.

Overall, case managers play a vital role in the safe discharge of a patient and in the long-term care of people with diabetes. ■

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Health Equity and Disability Issues in Diabetes Care

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Questions

- What percentage of the U.S. population has diabetes?**
 - Almost 7%
 - Almost 9%
 - Almost 11%
 - Almost 13%
- The financial burden of diabetes in 2017 was:**
 - \$297 billion
 - \$307 billion
 - \$312 billion
 - \$327 billion
- The use of an inpatient diabetes team has been associated with which of the following?**
 - A decreased rate of 30-day hospital readmissions
 - Decreased length of hospital stay
 - Lower hospital costs
 - All of the above
- Health equity is achieved when every person has the opportunity to obtain his/her full potential regardless of social position or other socially determined circumstances.**
 - True
 - False
- The American Diabetes Association Health Equity Bill of Rights includes which of the following?**
 - The right to healthy food
 - The right to stop prediabetes from becoming diabetes
 - The right to have your voice heard
 - All of the above
- Social determinants of health have proven to be more important than medical treatment with regard to longer life expectancy.**
 - True
 - False
- Some of the social determinants of health that need to be assessed in diabetes management include:**
 - Housing insecurity
 - Lack of access to technology
 - Medication costs
 - All of the above
- Some of the fundamentals of health literacy include:**
 - Reading
 - Writing
 - Comprehension skills
 - All of the above
- Health team and patient language discordance contributes to which of the following?**
 - The patient having less understanding of the diagnosis, prognosis, and treatment
 - Reduced quality of care
 - Reduced satisfaction for both patient and provider
 - All of the above
- Which of the following are cultural barriers that impact health equity for the patient with diabetes?**
 - Language
 - Role of family
 - Dietary habits
 - All of the above
- Which of the following should be considered in any diabetes education program?**
 - Health literacy
 - Learning styles
 - Cultural nuances
 - All of the above
- The case manager should actively work to make sure medication and devices for diabetes are covered by the patient's insurance.**
 - True
 - False
- Which of the following are key steps that should be reviewed at discharge for hospitalized patients with diabetes?**
 - Making the follow-up appointment
 - Transportation issues
 - Obtaining necessary medications
 - All of the above

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Health Equity and Disability Issues in Diabetes Care

Objectives

1. Define health equity.
2. State six barriers to health equity for people with diabetes.
3. State three steps the case manager can take to achieve health equity for people with diabetes.

Answers

Please indicate your answer by filling in in the letter:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____ 13. _____

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