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Addressing the Issues of Health Equity and Disability in Diabetes Care: Update 2025

By Alyson K. Myers, MD, and Yiqi Gao, MD

INTRODUCTION

Almost 12% of the US population, or around 38.4 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 2022 was $412.9 billion dollars, 74% of which was due to direct medical costs. Approximately 1 in 4 health care dollars is spent on diabetes alone.[2] Medications for comorbid conditions and inpatient admissions due to diabetes are the largest drivers of direct medical costs.[2] Use of inpatient diabetes teams including endocrinologists and certified diabetes care and education specialists[3] has been associated with a decreased rate of 30-day hospital readmission and length of hospital stay, and lower hospital costs,[4,5] but such teams are not readily available at all inpatient facilities. Access to such services is only one example of health inequity in diabetes care. There are numerous other disparities in diabetes care including prescribing differences, access to care inequities, health insurance variations (eg, Medicaid vs commercial insurance), and myriad 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 can "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 Box 1. Equity for people with diabetes is created and maintained by clinicians, health systems, and community; fractures in such systems lead to inequity.[6] The root cause of this fractured system can be further explored by assessing social determinants of health (SDOH) that disallow patients to be on the same playing field.[7] In addition, clinicians need cultural competence to address these variances in SDOH[6] because diabetes affects Black, Hispanic, and Indigenous patients at higher rates than White patients.[8]

HEALTH BARRIERS

SDOH have proven to be more important than medical treatment in determining longer life expectancy.[9] Some of the SDOH that need to be assessed in diabetes management include, but are not limited to, health illiteracy and innumeracy, lack of transportation, food and housing insecurity, lack of access to technology, cultural beliefs and practices, and medication costs. Additional obstacles such as language and vision/hearing loss affect diabetes care, and clinician/staff bias should also be considered.

BOX 1 RIGHTS OF PEOPLE WITH DIABETES

- 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

Health Illiteracy and Numeracy

Poor health literacy is often a major hindrance to achieving optimal health care, and there is a strong relationship between low health literacy and health care outcomes.[10] Health literacy lies on a spectrum; in some instances, people may have a good foundation of health literacy

Alyson K. Myers, MD, is an attending endocrinologist; Professor of Medicine; and Associate Chair of Diversity, Equity, and Inclusion in the Department of Medicine, Montefiore Medical Center: Einstein Campus, the Bronx, New York. She is also an Adjunct Professor at the Zucker School of Medicine, Hofstra/Northwell, Uniondale, New York.

Yiqi Gao, MD, is an internal medicine resident at Jacobi Medical Center/Albert Einstein College of Medicine, the Bronx, New York.

but experience challenges around people (ie, clinicians) 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. Numeracy involves both having mathematical skills and being able to understand mathematical information. Mathematical skills include understanding numerical measurements and units of measurement (eg, nutrition information involving serving sizes), comprehending glucose trends, and understanding health determinant risk factors for disease.[11,12] To successfully self-manage diet, exercise, medications, and insulin doses, patients must have basic health literacy and numeracy skills. Patients with type 1 diabetes (T1D) often need to count carbohydrates and take into consideration their variable glucose levels to calculate a bolus or titrate insulin.

Hearing/Visual Impairment

There are about 2.2 billion people globally who have near or distance vision impairment, and among those, 3.9 million cases are related to diabetic retinopathy.[13] Visual impairment has been shown to decrease a patient's ability to self-manage their diabetes. The issues that arise for patients with visual impairment are three-fold: lack of access to nonvisual diabetes information, limited diabetes testing choices (eg, a talking meter), and poor understanding by providers of the needs of this unique patient population.[14] Hearing loss is twice as prevalent in people with diabetes as is in those without diabetes[15]; it also has a significant negative impact on a patient's ability to manage their diabetes.[16] Patients who are unable to effectively communicate with their health care clinicians are less likely to learn about diabetes, including how to properly manage it.

Language

A major consequence of clinician-patient language discordance is miscommunication, which leads to a higher rate of medical errors, longer hospital stay, missed outpatient appointments, and more frequent emergency department visits.[17,18] In addition, such patients have limited access to services, thereby leading to reduced quality of care and decreased satisfaction for both clinicians and patients.[13] For groups who have not assimilated into American culture, these language barriers may even be greater because there are limited resources printed in their native language.[13] One study demonstrated that limited English proficiency was independently associated with feelings of receiving suboptimal care, especially when interacting with clinicians who did not speak their language.[19] The use of language-concordant health care providers has been found to predict positive attitudes and higher trust scores between providers and patients, increased counseling on diet and exercise, increased likelihood of discussing mental health issues, and greater patient adherence to providers' recommendations.[20, 21] Overcoming language barriers can improve diabetes control, according to a randomized controlled trial that compared Latino patients with limited English proficiency who received biweekly language-concordant health coaching to patients who received care as usual. The Latino patients had greater reduction in hemoglobin A1c than the control group.[20]

Cultural Competency

Recognizing cultural barriers is important, as is bridging language barriers. Some cultures, including Hispanic, Western Pacific, Chinese, South Asian, and Middle Eastern cultures, emphasize the role of family in medical care and meal preparation. 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.[22] For the Chinese population, dietary restrictions for diabetes may interfere with common cultural beliefs that food must be balanced (eg, "yin and yang"). Additionally, rice is a staple for nourishment and well-being; thus, providers must be cognizant that it may be difficult for patients to simply stop eating it. Traditional Hispanic cuisine can also be carbohydrate heavy with staples such as rice, beans, or tortillas.[23] Other than dietary limitations, shared-decision-making with patients is sometimes challenging with patients from different cultures because many elderly ethnic minority and migrant patients do not want to take decisions about treatment options themselves but want their families to be involved—to make decisions with them or even by them.[24]

Clinicians also need to be aware of the differences in body habitus among patient populations. Those of Asian ancestry often have increased intra-abdominal fat distribution compared to non-Asian groups. This influences the onset of T2D at lower body mass index (BMI) and potentiates cardiovascular disease risk.[25] Current clinical practice guidelines encourage earlier vigilance and assessment of diabetes risk at lower BMI cut points in East Asian and Southeast Asian populations[26]; despite this, several challenges and barriers often impede diabetes providers' ability to effectively engage with diverse diabetes populations including language discordance, patient cultural beliefs and practices, and lack of provider training in cultural competency and humility.[27]

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 affect a patient's ability to arrive at their appointments on time or at all.[28] It has been shown that patients without transportation often miss appointments. 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 regions that lack healthy food choices. Interestingly, a longitudinal study of people with diabetes found that uncertain access to food (food insecurity), as opposed to living in areas without healthy food (food deserts), was associated with poorer glycemic control.[29] In addition, food insecurity is also associated with more frequent hypoglycemia.[30] Qualitative work has demonstrated that unstable housing makes it more difficult to engage in self-care, follow self-management routines, afford diabetes medications and supplies, and eat healthy foods.[31] Patients may not prioritize their medications or be able to store them safely (eg, unused insulin requires refrigeration). Lack of access to care and health insurance are another two important barriers for people with diabetes who are homeless.[32]

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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. Medicaid programs were established to provide care to people with lower incomes, and Medicare was established to provide care to virtually all Americans 65 years of age and older and younger people who were medically disabled or had end-stage kidney disease requiring dialysis or transplantation. People can sometimes purchase commercial health insurance through their employer, but not everyone can afford it. Persistent disparities between commercial, Medicare, and Medicaid reimbursement can negatively impact health equity: lower Medicaid and Medicare reimbursement compared to commercial reimbursement make it harder for beneficiaries to find providers who accept these plans. This can restrict access to care, especially for lower-income and minority populations who are more likely enrolled in Medicaid and Medicare.[33]

During 2019-2022, for adults with diabetes aged 20 years and older, Hispanic persons had a lower prevalence of health insurance coverage (85.4%) compared to people who identify as non-Hispanic White (97.7%), non-Hispanic Black (94.4%), and non-Hispanic Asian (98.2%).[34] In a study of Medicare Advantage and commercial insurance recipients, newer agents such as sodium glucose cotransporter-2 inhibitors (SGLT2i) and glucagon-like peptide-1 receptor agonists (GLP1RA) were more likely to be prescribed to White individuals as well as to those with commercial insurance and higher incomes.[35]

High costs of insulin may also lead patients with diabetes to ration their insulin by taking lower doses, which can lead to hyperglycemia. Insulin prices vary depending on the type prescribed: premixed insulin and insulin in a vial/syringe, which is the least expensive.[36] Most recently, the out-of-pocket cost for insulin covered under Part B and Part D of Medicare was capped at $35 per month, a major step for insulin affordability for the senior population.[37]

Insurance type also affects access to diabetes technology such as insulin pumps or continuous glucose monitors (CGM), but insurance companies are not only to blame; clinician communication and bias about who can manage a pump or a CGM have also been implicated.[38] There is a clear difference seen in the rates of diabetes technology use across racial/ethnic groups and insurance types. In a study of patients with T1D by Agarwal and colleagues, White patients were more likely to use both an insulin pump or a CGM compared with Hispanic or Black patients.[30] White participants also were more likely to have a higher income, higher rates of health insurance, and more education.[30] Improving access to technology (eg, CGM data sharing) can further balance the discrepancies in health care, leading to better outcomes.[39]

STEPS TO TAKE TO OVERCOME BARRIERS

All these social and financial 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 US.[1] 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 the outpatient setting. This does not preclude providers from ensuring that patients with diabetes are educated in the hospital setting and on 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. One of the available methods that has been proven beneficial is the "teach back" method: providers explain what is important in a manner that the patient understands and then confirms their understanding by having them repeat with their own words what was just explained.

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.[23] It may also be appropriate to involve family members who may be caregivers or food preparers in these discussions.[23] In other instances, digital translation tools such as Google Translate[40] 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.[41] In the case of visual impairment, it is important to provide resources in audio form for future references (eg, recordings).[12] Additionally, certain diabetes supplies are equipped to help visually impaired patients. There are blood glucose meters that read measurements aloud. If patients are unable to read or have poor health literacy, pictograms, illustrated text, or spoken animations can be beneficial.[11]

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.[42] In a study of 20 Black and Hispanic inpatients who were on insulin as

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outpatients, most patients made errors in their insulin pen technique, most commonly not priming the pen or shortening the dwell time of the needle.[43] 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.[44,45] Addressing these issues may ameliorate the issue. Alternatively, case managers can work with the patient's caregivers as they 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 a for patients re 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.[46] 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.[47] In certain outpatient settings, case managers are an integral part of the process of completing prior authorizations.[48] 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 one or more insulin injections a day, have frequent hypoglycemia, and require medication adjustments based on blood sugar testing.[49] 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 clinicians. A CGM can be obtained from select pharmacies or a durable medical equipment (DME) company, depending on the insurance coverage.[37] Similarly, case managers can suggest that patients discuss insulin pump technology further with their outpatient clinicians because patients are required to complete outpatient visits and diabetes education to qualify for an insulin pump. In addition, the patient must have positive antibodies for T1D, or they must demonstrate that they no longer make insulin as noted by an undetectable C-peptide level. Additionally, CMS requires that patients have been on an insulin pump before enrollment in Medicare or be taking multiple insulin shots of insulin daily and have documented frequency of glucose self-testing an average of at least four times per day. For those who are on multiple daily injections, they must have also completed comprehensive diabetes education and have one or more of the following [50]:

- HbA1c level greater than 7%
- History of recurrent hypoglycemia
- Wide fluctuations in blood glucose before mealtime
- Dawn phenomenon with fasting blood sugars frequently exceeding 200 mg/dL
- A history of severe glycemic excursions

Transitions of Care

Finally, case managers can discuss and plan with the patient and family the care, treatment, and services that are needed upon discharge. This includes working with the primary care team to establish a process to resume held medications or transition the patient to a new medication regimen and to provide the patient with or prescribe the necessary durable medical equipment, supplies, and medications to avoid any gap in care and treatment.[51]

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 barriers, 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. ■

References

1. CDC, "National Diabetes Statistics Report," *Diabetes*, July 23, 2024, https://www.cdc.gov/diabetes/php/data-research/index.html.
2. Emily D. Parker et al., "Economic Costs of Diabetes in the U.S. in 2022," *Diabetes Care* 47, no. 1 (January 1, 2024): 26–43, https://doi.org/10.2337/dci23-0085.
3. Sara J. Healy et al., "Inpatient Diabetes Education Is Associated with Less Frequent Hospital Readmission among Patients with Poor Glycemic Control," *Diabetes Care* 36, no. 10 (October 2013): 2960–67, https://doi.org/10.2337/dc13-0108.
4. Vivek Bansal et al., "Inpatient Diabetes Management by Specialized Diabetes Team versus Primary Service Team in Non-Critical Care Units: Impact on 30-Day Readmission Rate and Hospital Cost," *BMJ Open Diabetes Research & Care* 6, no. 1 (2018): e000460, https://doi.org/10.1136/bmjdrc-2017-000460.

5. Samantha R. Mandel et al., "Retrospective Study of Inpatient Diabetes Management Service, Length of Stay and 30-Day Readmission Rate of Patients with Diabetes at a Community Hospital," *Journal of Community Hospital Internal Medicine Perspectives* 9, no. 2 (April 2019): 64–73, https://doi.org/10.1080/20009666.2019.1593782.
6. Sherita Hill Golden, Joshua J. Joseph, and Felicia Hill-Briggs, "Casting a Health Equity Lens on Endocrinology and Diabetes," *The Journal of Clinical Endocrinology and Metabolism* 106, no. 4 (March 25, 2021): e1909–16, https://doi.org/10.1210/clinem/dgaa938.
7. Felicia Hill-Briggs et al., "Social Determinants of Health and Diabetes: A Scientific Review," *Diabetes Care* 44, no. 1 (November 2, 2020): 258–79, https://doi.org/10.2337/dci20-0053.
8. CDC, "National Diabetes Statistics Report."
9. Jiale Zhong et al., "Associations of Social Determinants of Health with Life Expectancy and Future Health Risks among Individuals with Type 2 Diabetes: Two Nationwide Cohort Studies in the UK and USA," *The Lancet. Healthy Longevity* 5, no. 8 (August 2024): e542–51, https://doi.org/10.1016/S2666-7568(24)00116-8.
10. Tiffany Lori Nugent, Anne Marie Galea, and Roberta Sammut, "Health Literacy, Self-Management and Glycaemic Control in Persons Living with Type 2 Diabetes Mellitus: A Cross-Sectional Study," *Practical Diabetes* 40, no. 4 (2023): 28–34, https://doi.org/10.1002/pdi.2467.
11. Denis Visentin, "Health Numeracy in Research and Clinical Practice," *Nursing & Health Sciences* 21, no. 2 (June 2019): 139–40, https://doi.org/10.1111/nhs.12597.
12. Rongzi Shan, Sudipa Sarkar, and Seth S. Martin, "Digital Health Technology and Mobile Devices for the Management of Diabetes Mellitus: State of the Art," *Diabetologia* 62, no. 6 (June 2019): 877–87, https://doi.org/10.1007/s00125-019-4864-7.
13. "Vision Impairment and Blindness," accessed December 11, 2024, https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment. WTO website
14. Ann S. Williams, "Creating Low Vision and Nonvisual Instructions for Diabetes Technology: An Empirically Validated Process," *Journal of Diabetes Science and Technology* 6, no. 2 (March 1, 2012): 252–59, https://doi.org/10.1177/193229681200600207.
15. "Diabetes and Hearing Loss | American Diabetes Association," accessed December 18, 2024, https://diabetes.org/about-diabetes/complications/hearing-loss/diabetes-and-hearing-loss.
16. Eileen R. Chasens, Marilyn Enock, and Monica DiNardo, "Reducing a Barrier to Diabetes Education: Identifying Hearing Loss in Patients with Diabetes," *The Diabetes Educator* 36, no. 6 (2010): 956–64, https://doi.org/10.1177/0145721710383442.
17. Hilal Al Shamsi et al., "Implications of Language Barriers for Healthcare: A Systematic Review," *Oman Medical Journal* 35, no. 2 (March 2020): e122, https://doi.org/10.5001/omj.2020.40.
18. Kristin D. Maletsky et al., "Communication Experiences of Caregivers Using a Language Other Than English on Inpatient Services," *Hospital Pediatrics* 13, no. 6 (June 1, 2023): 471–79, https://doi.org/10.1542/hpeds.2022-007011.
19. Yael Schenker et al., "The Impact of Limited English Proficiency and Physician Language Concordance on Reports of Clinical Interactions among Patients with Diabetes: The DISTANCE Study," *Patient Education and Counseling* 81, no. 2 (November 2010): 222–28, https://doi.org/10.1016/j.pec.2010.02.005.
20. Usha Menon et al., "Efficacy of a Language-Concordant Health Coaching Intervention for Latinx with Diabetes," *Patient Education and Counseling* 105, no. 7 (July 2022): 2174–82, https://doi.org/10.1016/j.pec.2021.11.024.
21. Alexandria Daggett, Shaghayegh Abdollahi, and Mehrtash Hashemzadeh, "The Effect of Language Concordance on Health Care Relationship Trust Score," *Cureus* 15, no. 5 (May 2023): e39530, https://doi.org/10.7759/cureus.39530.
22. Melissa M. Parker et al., "Association of Patient-Physician Language Concordance and Glycemic Control for Limited-English Proficiency Latinos With Type 2 Diabetes," *JAMA Internal Medicine* 177, no. 3 (March 1, 2017): 380–87, https://doi.org/10.1001/jamainternmed.2016.8648.
23. Natalie Mora and Sherita Hill Golden, "Understanding Cultural Influences on Dietary Habits in Asian, Middle Eastern, and Latino Patients with Type 2 Diabetes: A Review of Current Literature and Future Directions," *Current Diabetes Reports* 17, no. 12 (October 23, 2017): 126, https://doi.org/10.1007/s11892-017-0952-6.
24. Barbara C. Schouten et al., "Mitigating Language and Cultural Barriers in Healthcare Communication: Toward a Holistic Approach," *Patient Education and Counseling*, May 8, 2020, S0738-3991(20)30242-1, https://doi.org/10.1016/j.pec.2020.05.001.
25. Julie-Anne Nazare et al., "Ethnic Influences on the Relations between Abdominal Subcutaneous and Visceral Adiposity, Liver Fat, and Cardiometabolic Risk Profile: The International Study of Prediction of Intra-Abdominal Adiposity and Its Relationship With Cardiometabolic Risk/Intra-Abdominal Adiposity," *The American Journal of Clinical Nutrition* 96, no. 4 (October 2012): 714–26, https://doi.org/10.3945/ajcn.112.035758.
26. Priscilla Susairaj et al., "Cut-off Value of Random Blood Glucose among Asian Indians for Preliminary Screening of Persons with Prediabetes and Undetected Type 2 Diabetes Defined by the Glycosylated Haemoglobin Criteria," *Journal of Diabetes and Clinical Research* 1, no. 2 (2019): 53–58, https://doi.org/10.33696/diabetes.1.009.
27. Catherine Saenz et al., "Personalized Lifestyle Modifications for Improved Metabolic Health: The Role of Cultural Sensitivity and Health Communication in Type 2 Diabetes Management," *Journal of the American Nutrition Association*, October 14, 2024, 1–14, https://doi.org/10.1080/27697061.2024.2413368.
28. Leela V. Thomas, Kenneth R. Wedel, and Jan E. Christopher, "Access to Transportation and Health Care Visits for Medicaid Enrollees With Diabetes," *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association* 34, no. 2 (March 2018): 162–72, https://doi.org/10.1111/jrh.12239.
29. Seth A. Berkowitz et al., "Food Insecurity, Food 'Deserts,' and Glycemic Control in Patients With Diabetes: A Longitudinal Analysis," *Diabetes Care* 41, no. 6 (June 2018): 1188–95, https://doi.org/10.2337/dc17-1981.
30. Kristen L. Flint, Georgia M. Davis, and Guillermo E. Umpierrez, "Emerging Trends and the Clinical Impact of Food Insecurity in Patients with Diabetes," *Journal of Diabetes* 12, no. 3 (March 2020): 187–96, https://doi.org/10.1111/1753-0407.12992.
31. Felicia Hill-Briggs et al., "Social Determinants of Health and Diabetes: A Scientific Review," *Diabetes Care* 44, no. 1 (November 2, 2020): 258–79, https://doi.org/10.2337/dci20-0053.
32. Janice Constance and Joanne M. Lusher, "Diabetes Management Interventions for Homeless Adults: A Systematic Review," *International Journal of Public Health* 65, no. 9 (December 2020): 1773–83, https://doi.org/10.1007/s00038-020-01513-0.
33. Robby, "Key Differences Between Commercial Health Insurance and Medicare," February 14, 2024, https://activitycovered.com/key-differences-between-commercial-health-insurance-and-medicare/.
34. Sarah S. Casagrande and Tiffany L. Gary-Webb, "Sociodemographic Characteristics of Youth and Adults With Diabetes," in *Diabetes in America*, ed. Jean M. Lawrence et al. (Bethesda (MD): National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), 2023), http://www.ncbi.nlm.nih.gov/books/NBK610148/.

35. Samantha T. Harris et al., "Prescribing Trends of Antidiabetes Medications in Patients With Type 2 Diabetes and Diabetic Kidney Disease, a Cohort Study," *Diabetes Care* 44, no. 10 (August 3, 2021): 2293–2301, https://doi.org/10.2337/dc21-0529.

36. Eisenberg Center at Oregon Health & Science University, "Premixed Insulin Analogues: A Comparison With Other Treatments for Type 2 Diabetes," in *Comparative Effectiveness Review Summary Guides for Clinicians,* AHRQ Comparative Effectiveness Reviews (Rockville (MD): Agency for Healthcare Research and Quality (US), 2007), http://www.ncbi.nlm.nih.gov/books/NBK45287/.

37. "Insulin Affordability and the Inflation Reduction Act: Medicare Beneficiary Savings by State and Demographics," *ASPE*, January 24, 2023, https://aspe.hhs.gov/reports/insulin-affordability-ira-data-point.

38. J. Lawton et al., "Health Professionals' Views about Who Would Benefit from Using a Closed-Loop System: A Qualitative Study," *Diabetic Medicine: A Journal of the British Diabetic Association* 37, no. 6 (June 2020): 1030–37, https://doi.org/10.1111/dme.14252.

39. Katharine D. Barnard-Kelly and Daniel Cherñavvsky, "Social Inequality and Diabetes: A Commentary," *Diabetes Therapy: Research, Treatment and Education of Diabetes and Related Disorders* 11, no. 4 (April 2020): 803–11, https://doi.org/10.1007/s13300-020-00791-4.

40. "Electronic Tools to Bridge the Language Gap in Health Care for People Who Have Migrated: Systematic Review," *Journal of Medical Internet Research* 23, no. 5 (May 1, 2021), https://doi.org/10.2196/25131.

41. Al Shamsi et al., "Implications of Language Barriers for Healthcare."

42. Birtha Hansen and Irina Matytsina, "Insulin Administration: Selecting the Appropriate Needle and Individualizing the Injection Technique," *Expert Opinion on Drug Delivery* 8, no. 10 (October 2011): 1395–1406, https://doi.org/10.1517/17425247.2011.614229.

43. A. K. Myers et al., "Perceptions of Insulin Pen Use and Technique in Black and Hispanic/Latino Patients with Type 2 Diabetes: A Qualitative Study," *Journal of Racial and Ethnic Health Disparities* 7, no. 5 (October 2020): 949–57, https://doi.org/10.1007/s40615-020-00718-6.

44. Frank J. Snoek et al., "Overcoming Psychological Insulin Resistance: A Practical Guide for Healthcare Professionals," *Primary Care Diabetes* 15, no. 3 (June 2021): 619–21, https://doi.org/10.1016/j.pcd.2021.03.001.

45. Suresh K. Sharma et al., "Prevalence of Primary Non-Adherence with Insulin and Barriers to Insulin Initiation in Patients with Type 2 Diabetes Mellitus - An Exploratory Study in a Tertiary Care Teaching Public Hospital," *European Endocrinology* 16, no. 2 (October 2020): 143–47, https://doi.org/10.17925/EE.2020.16.2.143.

46. "Common Insurance Issues With Insulin, Insulin Pumps, CGMs, and Test Strips," *Breakthrough T1D*, accessed December 11, 2024, https://www.breakthrought1d.org/t1d-resources/insurance/issues-around-insulin-pumps/.

47. Thomas Lew, Laressa Bethishou, and Lisa Shieh, "Earlier Identification of Medications Needing Prior Authorization Can Reduce Delays in Hospital Discharge," *Pharmacy Faculty Articles and Research*, May 1, 2018, https://digitalcommons.chapman.edu/pharmacy_articles/638.

48. Ramandeep Kaur, Patricia Morreale, and Marvin Andujar, "SmartPA: An Electronic Solution for Secure Prior Authorization Processing," in *Design, User Experience, and Usability: Understanding Users and Contexts*, ed. Aaron Marcus and Wentao Wang (Cham: Springer International Publishing, 2017), 664–76, https://doi.org/10.1007/978-3-319-58640-3_47.

49. "Article - Glucose Monitor - Policy Article (A52464)," accessed December 11, 2024, https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleId=52464.

50. "Article - External Infusion Pumps - Policy Article (A52507)," accessed December 11, 2024, https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=52507&ver=130&keyword=Insulin%20infusion%20pump&keywordType=starts&areaId=all&docType=NCA,CAL,NCD,MEDCAC,TA,MCD,6,3,5,1,F,P&contractOption=all&sortBy=relevance&bc=1.

51. "New and Revised Requirements for Disease-Specific Care Certification Programs," accessed December 11, 2024, https://www.jointcommission.orghttps://www.jointcommission.org/resources/news-and-multimedia/newsletters/newsletters/joint-commission-online/sept-11-2024/new-and-revised-requirements-for-disease-specific-care-certification-programs/.

Addressing the Issues of Health Equity and Disability in Diabetes Care: Update 2025

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Questions

1. **What percentage of the US population has diabetes?**
   a. 8%
   b. 10%
   c. 12%
   d. 14%
2. **Medications for comorbid conditions and inpatient admission due to diabetes are the largest drivers of direct medical costs for patients with diabetes.**
   a. True
   b. False
3. **Health equity is achieved when every person can 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.**
   a. True
   b. False
4. **The American Diabetes Association's Rights of People with Diabetes include which of the following?**
   a. Right to healthy food
   b. Right to health insurance that covers diabetes management and future cures
   c. Right to the latest medical advances
   d. All of the above
5. **Which of the following are health barriers to people with diabetes?**
   a. Health literacy and innumeracy
   b. Hearing/visual impairment
   c. Language
   d. Culture
   e. All of the above
6. **Numeracy is necessary for the person with diabetes because of which of the following?**
   a. To understand unit of measurement
   b. To comprehend glucose trends
   c. To understand health determinant risk factors
   d. All of the above
7. **Which of the following impact(s) the patient with diabetes who also has hearing/visual impairment?**
   a. Lack of access to nonverbal diabetes information
   b. Limited diabetes testing choices
   c. Poor understanding by providers of the needs of this unique patient population
   d. All of the above
8. **Which of the following are consequences of clinician-patient language discordance in miscommunication?**
   a. Higher rate of medical error
   b. Longer hospital stays
   c. Missed outpatient appointments
   d. All of the above
9. **Patient education can help reduce health inequalities for the patient with diabetes by understanding the patient's level of health literacy and learning style.**
   a. True
   b. False
10. **Which of the following are strategies to overcome barriers in language or literacy?**
    a. Provide information that the patient is able to understand
    b. Use language and sign language interpreters when needed
    c. Use devices such as glucose meters that read measurements aloud
    d. All of the above
11. **Case managers can be advocates with the payor to help the patient with diabetes receive the medications and devices necessary for achieving the desired outcomes.**
    a. True
    b. False
12. **The role of the case manager in overcoming barriers of health equity among patients with diabetes include which of the following?**
    a. Educate patient and family
    b. Coordinate with health care team
    c. Act as an advocate
    d. All of the above

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Objectives

1. Define health equity.
2. State four barriers to health equity.
3. State four steps to overcome barriers to health equity.
4. State the role of the case manager in addressing health equity and disability in diabetes care.

Answers

Please indicate your answer by filling in the letter:

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

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